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January, 1909

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AMERICAN BEE JOURNAL

DR. C. C. MILLER
The Nestor of American Bee-Keepers
(See page 8)

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THE AMERICAN BEE JOURNAL.

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
118 W. Jackson Blvd., Chicago, Ill.

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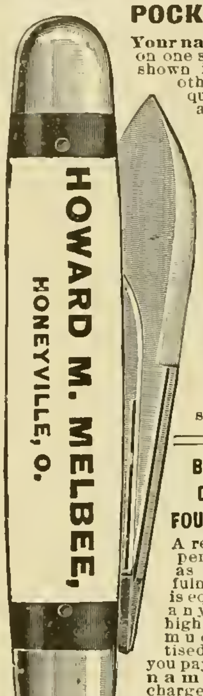

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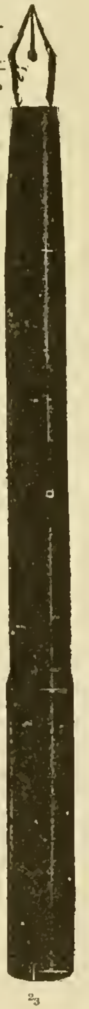
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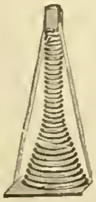

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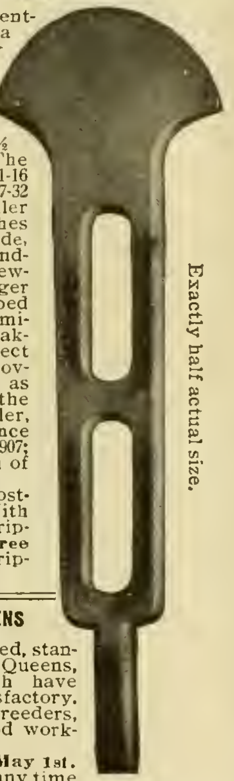
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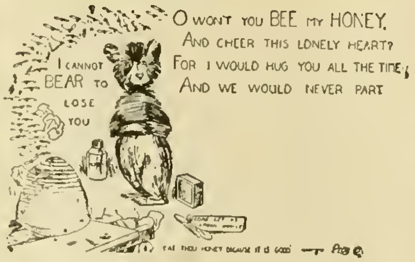
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AND CHEER THIS LONELY HEART?
FOR I WOULD HUG YOU ALL THE TIME,
AND WE WOULD NEVER PART
I CANNOT BEAR TO LOSE YOU
EAT THOU HONEY BECAUSE IT IS GOOD

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AMERICAN BEE JOURNAL

(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

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GEORGE W. YORK, Editor — CHICAGO, ILL., JANUARY, 1909 — Vol. XLIX—No 1

Editorial Notes and Comments

Bee-Culture and the Government

In the forthcoming report of the Secretary of Agriculture for 1908, at Washington, D. C., we find the following paragraph relating to bee-culture:

> "The work on bee-culture has been enlarged, and its operations have been unusually productive. The work on bee-diseases has been continued through the year, and it has been shown that the annual loss from these diseases, conservatively estimated at $2,000,000, may be considerably reduced by the application of better methods of manipulation. Testing of different races of bees has been carried on near Washington, and a study of the production and care of extracted honey, a study of the present status of bee-keeping, experiments on mating queens in confinement, and other work looking toward the bettering of apiculture has been under way."

No doubt bee-keepers will be interested to learn the details of the work that has been conducted by the Department of Agriculture through the Division of Entomology, along the line of bee-diseases, testing different races of bees, etc. Some of this work has been described in special bulletins, which we have announced from time to time. Dr. E. F. Phillips and his assistants certainly have ample opportunity for doing some good work in the interest of bee-keeping. They have already evidenced their fitness for the positions they occupy. But much remains to be done yet.

L' abeille et la ruche

That's the name of the French translation of Dadant's Langstroth, that classic on the Hive and Honey-bee, of which a new edition has appeared. The popularity of the work among French-speaking bee-keepers is shown by the fact that this makes 7000 copies of the French translation. (The third edition of the Russian translation is soon to appear.) Bringing this latest revision fully up to date has made an increase of 120 pages over the previous edition. Not every one will fully understand just how it is that a work *entirely* American in character should be so kindly received among bee-keepers of another nationality, because not every one understands the standing of the Dadants in their native country—France. The elder Dadant was known in this country as a bee-keeper of highest standing, but he was still better known in France. Good writer that he was in English, he was still more at home in his native tongue, and wrote more for French than for American journals. Against bitter odds he waged a heavy battle in favor of the movable-comb hive, coming off triumphant. C. P. Dadant, the son, inherits the good that was in his father. A fluent French writer, he is at home in the best French bee-papers, as was his father, with the advantage of having spent nearly all his life in this country, thus being a thorough Frenchman and an up-to-date American bee-keeper rolled in one.

The beautiful manner in which the book is gotten up does not tend to lessen its popularity. Among bee-keepers of this country may be found here and there a student of the French language. Such an one might do worse than to invest $1.50 in this excellent work in order to use it as a French reader.

Propolis from Wax

Under this heading, J. A. Huff says in Gleanings in Bee Culture:

> A few years ago I had a cake of bright-yellow wax lying out in the yard under some shade-trees. One day I noticed some bees on this wax. I watched them a while, and found that they were gnawing on the wax and putting it in their pollen-baskets. As nearly as I could tell there were only six of them. I looked over the hives in the yard and found that those bees were daubing up a crack between the cover and hive-body on a certain hive; and, as nearly as I could tell, those few bees were the only ones working on this cake of wax. I watched them perhaps half an hour, and saw that, during their manipulation of the wax, it got darker, and almost resembled, according to my eye, the propolis on the hive in other places. Some time after that, having occasion to open this hive, I noticed that the wax those bees deposited was the genuine stuff called propolis, in color, stickiness, and smell; and ever since that time my belief has been that propolis is manufactured by the bees out of wax mixed with some substance to change it chemically. That the bees never gather any substance to use as propolis I will not claim.

The probability is that if Mr. Ruff would melt the propolis in question he'd find it separate into two parts, one wax and the other propolis. No doubt many have noticed bees nibbling pieces from exposed wax and packing it on their legs. which they no doubt use for plugging up cracks in place of propolis; but that by any possible means they can change wax into propolis is extremely doubtful. Although used in place of propolis it is still wax, albeit mixed with propolis. The "color, stickiness, and smell" of propolis is so pronounced that under ordinary observation one might not discriminate between a mixture of wax and propolis, half-and-half, and a pure sample of propolis.

The important point in the case is that no small amount of wax may be thrown away under the impression that it is propolis. When section honey is scraped for market, a certain amount of propolis is accumulated. Whether it will pay to get the wax out of this may be a question. As an experiment, 2¾ pounds of such scrapings were put in a dripping-pan with a little water, and heated. More or less of small chips and other impurities were present, and there was obtained 2½ ounces of very dirty wax. Not very good pay, that; but with scrapings of better quality and larger amount the case might be different.

Measures to Prevent Swarming

O. L. Hershiser says in the Canadian Bee Journal:

> With me the control of swarming in the production of extracted honey is successfully accomplished by enlarging the brood-chamber from time to time as needed, by adding what I have found by experience will be not just enough, but an abundance, of room for the queen, and at the opening of the honey har-

vest, an abundance of room for the storage of the honey. At the near approach of the swarming season, too much room is just enough. But with very prolific queens, and especially when a visit to the out-apiary has been delayed by rainy weather or for other reasons when the weather conditions are conducive to swarming, it occasionally happens that a few colonies will become overcrowded, and hence the loss of an occasional swarm. But inasmuch as the lost swarms represent a smaller sum than would be required to keep an attendant in charge, or to compensate for the upsetting of plans in order to reach the out-apiary on exact time, the lost swarms with me do not represent an actual loss of profits.

After some discussion of prevention of swarming with colonies run for comb honey, which he says is quite a different proposition, he says:

> There is one plan of swarm control that has heretofore been the subject of discussion in more or less of a desultory fashion, but which seems to me to merit exhaustive experiment by every apiarist who is now making a specialty of bee-keeping, and especially the comb-honey producer, and here I refer to the plan of having a queen of the current season's rearing introduced into every colony that is likely to swarm, just prior to the swarming season. It seems to me that this plan is the most fruitful of possibilities of any that has been discussed, and that concerted experiments by many apiarists with this means to arrive at the desired end cannot but result in much good to the craft.

While all this is true, it may be well to warn the beginner not to be too sanguine. There is no doubt that in general terms there is less danger of swarming with young than with old queens. W. Z. Hutchinson made a practise of requeening at the beginning of the season each year, replacing each queen with a young queen obtained from the South. With him this succeeded in preventing swarming. Not with all others. Gravenhorst said there would be no swarming with a queen reared in the hive during the current year. While this may be entirely reliable in some sections—possibly every season in some localities—at least a few failures have been reported.

Wintering Several Queens in One Hive

F. Wilhelm reports in the Prak. Wegweiser that he has learned the secret of having several queens live over winter peaceably without caging in the same colony. In 1903 he succeeded with 3 queens in one colony. A year later he tried 6 queens in one colony, 5 of which lived. In the winter of 1905-6 he tried 10 in one colony, 7 of which came through alive and lively. This winter he is trying 20 queens in one colony with little fear of failure. He does not divulge the secret of success, and one may be excused for being a little skeptical until further particulars are given.

Milk Peddlers Selling Honey

Joseph Tinsley says, in the Irish Bee Journal:

> I have devoted much time to this particular branch of the industry, and peddling honey can be done in a very simple and easy way by procuring the assistance of a milk seller. Some time ago I persuaded a bee-keeper, who was also a milk seller, to try this method, and in a very little time he had sold over 500 glass jars of honey at 25 cents per jar, and is still buying more to keep up with his customers.

In this country every town of any considerable size has at least one milkman who daily supplies the people with milk. In any of these places where satisfactory arrangements with the grocers do not exist, it might be well worth while to consider whether the purveyor of milk might not be induced to take a proper interest in getting the people supplied, not only with milk, but with "milk and honey."

Ages of Queens

As having some bearing upon the relative value of queens at different ages, the following Stray Straw, in Gleanings, is of interest:

> Summer of 1908 I had 18 colonies that gave 200 sections or more each. Of these,
>
> 3 with 1905 queens averaged 217 sections each.
>
> 3 with 1906 queens averaged 233 sections each.
>
> 12 with 1907 queens averaged 223 sections each.
>
> I am inclined to believe that, with a good strain of bees, a queen's second year will in general be her best.
>
> My 4 queens that stood at the head of the list were as follows:
>
> A 1906 queen with 276 sections;
> A 1907 queen with 266 sections;
> A 1907 queen with 252 sections;
> A 1905 queen with 244 sections;
>
> The 1906 queen had at one time an egg in one queen-cell, and at another time a grub in one queen-cell. I don't know whether a swarm would have issued if these had not been destroyed. Both 1907 queens would have swarmed if they had been let alone. Strange to say, the 1905 queen showed the least inclination to swarm of the lot. Just once an egg was found in one queen-cell.

Uniting Colonies of Bees

It is more or less common practice, when uniting two colonies, to make one of them queenless some little time before uniting. It remained for John Silver to discover that a still safer way is to make *both* colonies queenless, as he reports in the Irish Bee Journal. To this he adds:

> I also find that swarms or driven bees can be added to an established colony at any time of the day without fighting, if both queens have previously been taken away, and the bees have had sufficient time to discover their loss—sometimes half an hour or an hour is quite sufficient.

Of course the queen is added afterward.

Stopping Leaks in Hives

When hives are to be hauled it is generally desirable that all leaks should be stopped, so no bee can get out, and it is especially desirable to have something with which one can quickly stop any leak discovered on the road. Cotton rags are good, but R. F. Holtermann, in Gleanings, says he has never found anything equal to cotton-batting. "In a moment it can be broken into any size; it can be made to fit any opening; it sticks well where put, and it is so loose in texture that the bees prefer to leave it alone."

Shaking Bees Moved Short Distances

It is well known that bees thoroughly shaken become so frightened that they have all the fight taken out of them. It seems, too, that shaking takes the memory of location out of them. If bees are moved a short distance at a time when they are flying daily, the greater part of the older bees will fly back to the old location if no precaution is taken. Geo. W. Williams relates in The Bee-Keepers' Review that he moved 4 colonies 50 feet, shook the bees out in front of their respective hives, making a half-hour job, and scarcely a bee returned to the old location, although 2 hives were there to receive them.

Comb Honey Twelve Years Old

In Gleanings, is a picture of honey in a case that certainly presents a very fine appearance on the printed page, and underneath runs the legend, "This honey is 12 years old; there is no change in it, and, so far as appearances show, it is not candied."

At the late Chicago convention a section was shown said to be 12 years old, and on picking open a cell there was no sign of candying. But there was a decided change in the outward appearance, the cappings having that sort of mildewed look one sometimes sees on sealed combs that have been in the hive over winter. This, however, might not show in an engraving.

Miscellaneous News-Items

Volume 49 Now Begun

Yes, this is the 49th volume of the American Bee Journal. Next year (1910) will be its Jubilee Volume—50th year! But we want to make this 49th volume better than any preceding one. And we think we can do it. We believe we have made a pretty good start in this January number.

We want to invite all our readers to help us make this a great year for the old American Bee Journal. We want more subscribers. We want more good pictures of apiaries, and of new and improved apiarian implements, etc. We want to publish your short cuts to more successful honey-production. In fact, we want your fullest co-operation and help during all of 1909, so that together we can produce a bee-paper worthy the name and long record of the American Bee Journal.

Shall we not with each succeeding month's number just make it over-run with the most valuable and helpful reading for every one who desires to have the largest success with bees? In order to accomplish this, however, we must have the hearty support of all our present subscribers; and, then, as fast as we shall add other thousands of readers to our list, we shall be able to carry into effect plans for an enlarged and a better bee-paper in every way.

But first let us have the prompt renewal of every present subscription, and, if possible, a new one with each. Then, after that, the other desirable things will be more certain of realization. Try it, all of you, and see if we are not right in our statements about this matter.

APIARY OF B. F. MILLER, MEMPHIS, TENN.

Death of John M. Rey

On Aug. 9, 1908, John M. Rey, of Saginaw, Mich., died of gastric ulcers of the stomach. He had been a bee-keeper for 36 years, and a long-time reader of the American Bee Journal. He was born in Wirtemberg, Germany, Oct. 13, 1852. His widow, 5 daughters, and one son survive him.

Apiary of B. F. Miller

As a friend came to my place with a camera, I had him take some pictures, and am sending some of them.

I got the bee-fever 3 years ago from a swarm alighting in the shop lot, and can't say that it has abated any yet, although I have found more work and expense about it than I had any idea of; but I like it, and believe my hardest time is over, both as to labor and expense, and I gather experience. I appreciate more and more the text-books and the "Old Reliable," for their writers "have been there" and generally know whereof they write. I also appreciate J. J. Wilder's book, "Southern Bee-Keeping." It is a good book for beginners, especially in the South.

I increased from 3 to 9 colonies this season, and extracted 200 pounds of honey. I have 6 Dadant and 3 8-frame Simplicity hives that I will run for comb honey. B. F. MILLER.

Memphis, Tenn., Sept. 29.

Melting up Old Combs

The results of melting up old combs is a matter of interest. Under some circumstances, without proper appliances at hand, enough wax will be obtained to pay for the work, and it may be better to use the old combs for lighting fires. Under the most favorable circumstances the result may be different. Here is the result of melting up some very old combs, as given in Gleanings in Bee Culture:

> There were 225 combs, Langstroth size, and the total amount of wax secured was 69 pounds, which is a little over 3 pounds to each 10 combs. The total time of rendering was 9 hours. The combs were melted in two washboilers, and run through the press twice, yielding 63 pounds of wax the first time, and 6 the second.
>
> At 30 cents per pound, 69 pounds of wax will bring $20.70. From this we must deduct the cost of the labor, $1.80, leaving $18.90.
>
> Medium brood foundation, to fill 225 Langstroth frames, at 51 cents per lb., amounts to about $16.32, so that we get our full sheets of foundation for nothing, and have considerable left. The work could usually be done when the labor would not be worth 20 cents an hour. But even if this is not possible, there is nothing lost.

Apiary of W. W. McNeal

EDITOR YORK:—I am sending some small photos of my apiary, with a view to getting a line on the proper density. I will number them for convenience. No. 1 is a corner in the apiary as it was at my old home, Wheelersburg, Ohio. No. 2 is also a corner in the apiary, but at the new home on Pleasant Hill, Clermont Co., Ohio. No. 3 is a similiar view, and as I said before, is intended to get a better idea as to the correct shade or density. No. 4 is a sideview of the house looking west. No. 5 is a front view.

APIARY OF W. W. MCNEAL.

The drought this year has been the worst I ever knew—no rain of any consequence since last May. The cisterns and wells throughout this section are nearly all dry. Almost every one is hauling water—hauling it from wherever they can possibly find it. The Ohio River is lower than I ever knew it before, and I've lived on the banks of the dear old stream for about 30 years. In early spring the rains were excessive, so much so that the farmers almost despaired of getting their crops planted. But when the rains ceased, they seemed to have quit for good.

I got a fairly good crop of honey, however, from white clover, which, of course, comes in June with us here in Ohio, and so did not suffer much from the drought till near the close of the clover season. The fall flow from wild aster was light, but the bees stored enough to carry them over till spring.

I think the American Bee Journal is getting better all the time. I congratulate you on your good work.

W. W. MCNEAL.

Amelia, Ohio, Oct. 14.

[We decided to use only one of the 5 pictures — No. 3. All were fairly good pictures.]

Delayed Fertilization

It is generally believed that if a queen is not fertilized within 2 or 3 weeks she will prove of little value. W. Guenther, a German veteran of excellent repute, says in Prak. Wegweiser, that while this may be true of queens reared early, queens reared later in the season whose fertilization is delayed on account of unfavorable weather prove to be excellent queens. He has had a number of such experiences when fertilization was delayed 5 or 6 weeks, and in 1886 a number of queens were not fertilized for 2 months, yet proved good. Queens fertilized as late as October were generally good, while those fertilized in spring were likely to be poor.

Canadian Honey Standard

At the convention of the Ontario Bee-keepers' Association, the following resolution was passed, as indicating the view of the Association concerning the standard of "pure, genuine honey:"

> "Recognizing the importance of legal definition in the case of honey, this Association respectfully recommends the adoption of the following resolution as embodying the present state of our knowledge regarding Canadian honey:
>
> "Honey is entirely the product of the work of the bees (Apis mellifica), operating upon the nectar of flowers and other saccharine exudations of plants, and contains not more than 25 percent of water, or more than 8 percent of sucrose (cane sugar), nor less than 60 percent of invert sugar. It does not give a blue color with iodine (absence of starch syrup), nor a red color with aniline acetate (absence of artificial invert sugar), nor a dark color with Leey's reagent (ammoniacal silver), nor a marked precipitate of dextrin on adding large excess of alcohol (absence of glucose syrup)."

Blind Bees Best (?)

Mr. Ernest L. Schuman, of New York State, sends the following clipping:

> H. R. Latimer, professor of mathematics in the Maryland School for the Blind, at Baltimore, thinks he has made a discovery. He says: "A breed of blind bees that make the best honey on earth has been discovered. Having through generations lost their sight, they have so keenly developed the sense of smell and taste that they are able unerringly to pick out the sweetest flowers."

We wonder by what rule of mathematics Prof. Latimer figures that out. It must be a sort of "blind process." So a blind bee is better than one with several thousand eyes! Well! well!!

Wintering and Springing Bees over Pits

Oliver Foster, in order to have his bees wintered above ground, and at the same time have the heat of a small cellar, describes his plan in the Bee-Keepers' Review. It appears that 10 colonies were wintered over each pit, a covering of chaff being over the hives. He says:

> I constructed dry wells, or pits, for two apiaries of over 100 colonies each. They were about 10 feet deep, 3 feet in diameter at the bottom, and 5 x 7 feet square at the top. A curb of ⅞ lumber filled in the top, 20 inches deep. The hives were supported on a skeleton platform. They were arranged along the sides against the curbing, a space being left between the rows in which the operator could stand on a board while manipulating. Hives were so arranged that two colonies could fly from each end, and three from each side of the pit, through openings formed in the top of the hives, and corresponding ones in the curbing. To cover the pits, two light trays filled with chaff were placed over each pit—two over each pit, instead of one, for convenience in handling. Together they projected an inch or two over the curbing all around.

Next Year's Prices of Honey

Bee-keepers are a hopeful lot. Notwithstanding the good crops throughout a large part of the clover regions, net results are not entirely satisfactory on account of the low prices ruling; but there is always the future. Editor Hutchinson says:

> "Prognostications are something in which I seldom indulge, but I am going to prophesy that, next year, honey will be honey. The old stock will all be cleaned up, and the drouth has injured the clover to such an extent that not much of a crop can be expected the coming year. The man who has nice, white extracted honey can afford to keep it over, if he can't get all that it is worth now."

Antiquity of Bee-Keeping

In a book review, the British Bee Journal says, "Bee-keeping is undoubtedly the oldest craft under the sun." That's a pleasant thing for bee-keepers to believe, and our British contemporary is hereby requested to give proof upon which such a statement is made. For it is just possible that fruit-growers might attempt to put in a prior claim. Likely, however, no one will dispute this further claim to antiquity:

> "We also learn that so far back as the Bronze Age it is certain that wax was used in casting ornaments and weapons. That bee-keeping must have been carried on thousands of years before the Great Pyramid was built is evidenced by the bee having been chosen to represent a king in the Egyptian hieroglyphic symbols."

Massachusetts Bee-Meeting

At the meeting of the Massachusetts Society of Bee-Keepers, held in the Ford Building, at Worcester, Mass., Saturday evening, December 5, Prof. James P. Porter, of Clark University, and President of the Worcester Society, spoke on "The Relation of the Bee to the Flower."

Place For Additional Supers

In producing section-honey, whether the right place for adding empty supers is above or below the partly filled super is a matter upon which there is a difference of opinion. Dr. C. C. Miller gives in Gleanings a reason for putting the empty super under, that will be new to some. If the experience of others agrees with his, it is an important argument. He says:

> There's one item in this matter of putting empty supers above or below that I don't remember ever to have seen mentioned in print; yet it has a very important bearing. You know you like to have the bees commence work in a super all over at once, the work just as well advanced in the four corners of the super as in the center. To me the prettiest sight in a super I ever saw is a set of sections exactly alike in advancement, every section nearly filled, but not a cell yet sealed. No, it isn't so pretty a sight to see the 24 sections all sealed with their snow-white cappings—not for me; for the sight I have described pictures a strong flow, a strong colony, and work of the most uniform character. Well, I get that sort of work sometimes—not so often as I like—when I give a fresh super under a strong colony in a strong flow. When I've given a super on top I never had such a state of affairs—never. The center sections were always well in advance of the outer ones, if, indeed, the outer ones were attacked by the bees at all. So, other things being equal, that matter of even starting all over the super is enough to settle me in favor of putting the empty super under, so long as I have any reasonable hope that the season will continue until the super is finished.

Hoodoo Ribbons in Australia

The Australian Bee Bulletin has the following item, page 96:

> Horses on the Clarence are ridden and driven with bows of red ribbon tied round their throats as a preventive against an attack of bot-flies.

Just what interest that item may have for bee-keepers does not appear on the surface, unless it be that the right shade of color found, bows of ribbon tied round the throats of bee-keepers would prevent the attacks of bees. But don't they have rather queer bot-flies on the other side of the world? On this side they trouble horses' legs, not their throats.

"A Year's Work in an Out-Apiary"

This is the title of a 60-page, paper-bound book, 6x9 inches in size, written by G. M. Doolittle, of New York State, who is so well known to our readers. It tells how an average of 114½ pounds of comb honey per colony was secured in a poor season. Mr. Doolittle's over 35-years' experience in producing comb honey gives the weight of authority to what he says on the subject of bees and bee-keeping. The book is sent postpaid for 50 cents; or with the American Bee Journal one year— both for $1.10. Send all orders to the American Bee Journal, 118 W. Jackson Blvd., Chicago, Ill.

Biographs of Beedomites

DR. C. C. MILLER

Perhaps the most widely known and read bee-keeper in all the world, is Dr. C. C. Miller, of Marengo, Ill. Although he will be 78 years old June 10, 1909, he still writes with the vigor and clearness of a man of half his age.

We count it among our richest blessings that we came to know Dr. Miller so intimately, so many years ago. He has ever been like a father to us, and still counts it among his kindly duties to keep us in the right path apiculturally as well as in several other ways. For all of which we are truly grateful to him.

His remarkable record in honey-production during 1908 is well known. It is the more wonderful on account of his years, for his crop of comb honey was between 18,000 and 19,000 pounds, and it was all fine, marketable honey.

Editor Ernest R. Root, in the August number of his great apiarian publication, Gleanings in Bee Culture, not only gave a full-page portrait of Dr. Miller, but also a graphic pen-picture from which we take the following paragraphs:

> Dr. C. C. Miller reads both the American

and European exchanges, and his articles and comments on both sides of the Atlantic have brought him into prominence throughout all beedom.

His writings are further enhanced by a ripe experience of many years, for he is now in his 78th year, having been for 40 years a bee-keeper, and a good one, especially in the production of comb honey; and, if I mistake not, his crops are sold before they are off the hive. This speaks volumes, not only for his method of management but for his careful, honest grading, which is all done by the members of his family. The buyers know in advance just exactly what Dr. Miller's honey is going to be, and they are usually willing to pay above the market price because they know beyond any question that there will be no after-quibble over the grading, quantity, or quality. There is no reason why many others can not sell their crop in the same way.

Too often we pay tribute after our friends are gone, and just as often regret that we did not bestow some meed of praise while they were with us, especially if they are of the kind that can't be spoiled. For that reason I felt inclined to present the "smiling picture" which his family and all of us know is so natural—not because we *see* a smile, but because we know there is something *within* that makes a "smile that won't come off." What a happy world this would be if we all had that smile!

Dr. C. C. Miller has long since ceased to think of the dollars. All he seems to care for is enough to provide for himself and family. For many years his sole thought has seemed to be, "How can I help to make the world happier and better?" He is an active worker in the church and Sunday-school; but of late he has been admonished by his pyhsician to let some of those outside things go. He is beginning to husband his energies; but, as any one can see who follows his writings, he makes a constant effort to bring the name of his Master before the world.

We thought it would be nice to open the new volume (the 49th) of the American Bee Journal, with Dr. Miller's latest portrait. We know that quite a good many of our readers are already familiar with it, but there are always a number of new readers who enter the ranks early in each year, and they, as well as the old friends, will be glad to look into the face of one whose contributions to bee-literature have been so extensive in the past, and which probably will continue so long as Dr. Miller is able to write.

His book, "Forty Years Among the Bees" is a faithful portrayal of Dr. Miller's own successful methods of honey-production. In a way it is a monument, built by himself, and one that will endure! It should be read by every bee-keeper who desires to have the largest success with bees.

Dr. Miller has had charge of the "Question-Box" in the American Bee Journal for many years. There is nothing of the kind in any other apiarian publication that compares with it. And the Doctor takes a great pleasure in answering the questions, as he feels that in so doing he is really helping some one. His whole life has been, and is, an expression of the word "helpfulness." By his very smiling he is helping to make the world a little brighter, and a little more cheery to some one else.

We only wish that all our readers knew Dr. Miller as well as we do. It is always inspiring to know the leaders among the men and women of the world. And Dr. Miller is a prince among its bee-keepers. We are glad to acknowledge our indebtedness to him, and thus to add our word of appreciation of his life and work.

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Beet-Sugar for Winter Bee-Feed.

I am very much interested in the question whether *beet-sugar* is injurious to bees as a winter food, and in what way. Mr. T.W. Cowan, the editor of the British Bee Journal, tells me that many of the winter losses, may be attributed to feeding with beet-sugar, as such losses do not occur when pure cane-sugar is used.

I should be very glad to know your experience about this, and whether this opinion is held in the United States. Can you tell me of any articles on the subject?

(Miss) Alice Baird.

St. James, West Malvern, Dec. 3.

The question as to the relative value of beet and cane sugars as food for bees is one upon which it is very difficult to get light. For years the British Bee Journal has stoutly insisted that only cane should be used to feed bees for winter, and that there was danger from beet sugar, but on this side the big pond there has been very little said about it, and probably no serious investigations in the direction of trying to settle the question. So it is impossible to cite you to articles that would help. Occasionally some bee-keeper, roused by what has been said in England, has raised the question here, and if he has had any sort of an answer at all it has been to the effect that chemists assure us that chemically the two are the same. But that answer is not altogether satisfactory, seeing that coal and diamonds are so nearly alike chemically without ever bringing the market prices of the two on a par.

Tons of granulated sugar have been used in this country as winter food for bees, and perhaps every bee-keeper agrees that sugar syrup is as wholesome as honey for that purpose, while some insist it is more wholesome—certainly more wholesome than some honey. Now if tons of sugar have been used, and it has never been discovered that it was bad for bees in winter, it would seem there is safety in beet-sugar, *if* beet-sugar has formed any considerable proportion of the sugar used. That, however, is perhaps a matter that no one can exactly find out. It is doubtful that any bee-keeper ever knew whether the granulated sugar he fed was made from beets or cane. Perhaps experts in the sugar business can not tell one from the other. Certainly a bee-keeper can not be expected to tell the difference.

A Chicago daily, in an article based on U. S. government reports, says that in the year 1907 more than a third of the sugar produced in this country was from beets, while beets now supply one-half of the grand total produced in the world at large. So it is reasonable to suppose that, so long as there is no way by which bee-keepers may know the source of the sugar he feeds, there is likely to be fed a pound or more of beet-sugar for every 2 pounds of cane. In that case, if beet-sugar is so very bad for bees, there hardly ought to be such a general impression that sugar is good for bees in winter. Probably the average bee-keeper in this country never troubles his head to think whether sugar is made from beets, cane, or what not. At the same time, the word of so good an authority as Mr. T. W. Cowan has weight, and if one could know for certain as to the kind of sugar offered, she would do well to use cane.

As to *how* beet-sugar is supposed to injure bees by those who consider it injurious, it is probable that it is supposed to cause diarrhea.

Honey for Making Hands White.

Rub the hands well with vinegar and corn meal to clean them well after doing the morning and dinner work, then wipe and rub in a few drops of honey and water mixed, not enough to be sticky; keep it up and be rewarded with white hands.—Mrs. W. M. Knoer, in Practical Farmer.

Using Honey for Canning Fruit.

So far I have used honey for canning fruit only in a small way, but have watched the results carefully, and am fully convinced that it can be used in place of sugar for any kind of fruit with much better results than if the sugar were used. When using honey I have never had a can spoil, and have always found the fruit far better and richer than that put up otherwise. We have been eating some peaches this winter that were put up 3 years ago, and in that time we have moved once. In every instance the "gude mon" has handed up his dish for a second helping, which is always a sign that it "hit the spot." I would, therefore, advise those wishing to try the honey to do so by all means.

Formerly, when I canned strawberries I took 2 quarts of good, firm berries, just from the vines, stemmed them late in the day, rinsed them quickly in cold water, and drained in a colander until I could prepare another can. I put them in a stone crock and covered them with a cup of granulated sugar and set them in a cool place until morning. I then put them on the stove, boiled them well, and canned them. With this amount there is enough to fill a quart Mason jar, and a little over for a taste. When using the honey in place of sugar the same method is followed except that only half a cup of honey is used, which is poured over the berries so that it goes down through and all around them. We are careful to use good fruit, as one over-ripe berry may spoil the whole lot. Cherries, raspberries, and blackberries may be canned, using about half the amount of honey that would ordinarily be used of sugar. The larger fruits, such as peaches, pears, quinces, etc., are also improved by the honey.

Fruit must be handled right in order to be good and we must be free from other duties while canning it. A very safe rule is, to follow whatever plan has been found successful, substituting half the amount of honey for the sugar. I am sure no one will be disappointed.

For cooking purposes, making pickles, etc., honey is just fine. We never buy molasses, corn-syrup or glucose—"ugh!" You should see some of my gingerbread which Mr. McGlade says is the "cake that takes." Here is the recipe—try it for yourself:

> Two eggs, cup granulated sugar, cup and a half of honey, cup of sour milk or buttermilk; cup of butter or lard; teaspoonful of cinnamon and a teaspoonful of ginger. Beat all together and add two teaspoonfuls of soda dissolved in a little hot water; flour to make a thin batter (about 5 cups). Bake slowly.

We use honey in making pumpkin pies—a generous teaspoonful to the pie. Furthermore, we use honey on the table every day, and our little boy never tires of it. He helps himself with a spoon whenever he likes, at mealtime or between meals, and has not had a cold nor seen a sick day this winter, although he runs and plays out in the fresh air in all kinds of weather. Of course, honey can not be given entire credit for this, but it helps, and is cheaper than doctors' bills.

Some have asked whether fruit can be put up cold by simply filling the can with the fruit, covering it with honey, and sealing. I have never tried it, because I don't believe the fruit would keep or be good; but if any one wishes to be convinced, let him try it, for it would cost only about 75 cents—Mrs. Frank McGlade, in Gleanings in Bee Culture.

She was "Stung."

Mr. C. G. Chevalier, a subscriber in Maryland, sends the following clipping:

> "What did the Boston girl say when Sutherland refused the leap year proposal she made him?"
>
> "She sighed and remarked that she was an unskilled apiarist."
>
> "What did she mean by that?"
>
> "She meant that she was stung."—Cleveland Leader.

German Honey-Cakes.

Honigkuchen (Honey Cake) — One pound of honey, two pounds of flour, one-half pound of sugar, three whole eggs, two ounces of butter, one teaspoonful of ground cinnamon, one teaspoonful of ground cinnamon, one teaspoonful of potash, one-half teaspoonful of ground ginger, one-third teaspoonful of ground mace, two ounces of chopped candied peel, a little grated lemon peel. Warm the honey sufficiently for the butter to melt in it. Dissolve the potash in a tablespoonful of very strong coffee, and then sift the flour into a bowl, make a hollow in the middle, pour into it the beaten up eggs, the lukewarm honey and the remaining ingredients. Mix well and knead to a firm paste. Roll out very thin, cut in various shapes with a cutter, place on a buttered tin and bake a light brown. The cakes may also be brushed over with white of egg and sprinkled with chopped almonds.

Honigkuchen (Honey Cake) — One pound of honey, one-half pound of sugar, one-half gill of rose water, one-half ounce of potash, one and one-half pounds of flour, three eggs, one-half pound of chopped hazel nut kernels, five ground cloves, one-half ounce of ground cinnamon, one-half tablespoonful of grated lemon peel, sixteen grated bitter almonds. Mix the flour, chopped hazel nuts, cinnamon, cloves, lemon peel and almonds. Boil up the honey with the sugar, and when cool pour into the flour and spices, with the potash dissolved in one-half gill of rose water and beaten up with the eggs. Mix well and knead with the hands. Immediately the paste begins to stiffen roll it out about one-half inch thick and bake in a moderate oven in a buttered shallow pan. Cut up when cool and ornament with a thin sugar icing. Before baking the cake sliced almonds and strips of candied peel may be arranged in it.—Chicago Record-Herald.

Convention Proceedings
HILTON

Bee-Keeping in Hawaii

One thousand tons of honey is what the busy bees of Hawaii have to show for their year's work, or would have it to show if the greater part of it had not already been exported to confectionery manufacturers on the mainland. Two million pounds of sweetness, not to mention the tons of wax that have been secured, make a banner honey crop for the Islands, and it was with a note of satisfaction in his voice that President Judd of the Hawaiian Bee-Keepers' Association announced the figures at the annual meeting of the organization yesterday.

The importance of the honey and wax crop to Hawaii has now grown to a point where the bee-men are commencing to talk about combining for the proper marketing of their product, and this is one of the things that was broached at the annual meeting yesterday (Dec. 9, 1908) it being suggested that a Honey Factors' Association, on the lines of the Sugar Factors,' should be formed. The idea will probably be carried out.

Yesterday's gathering was the second annual meeting of the bee-men, there being present in the rooms of the Merchants' Association A. F. Judd (in the chair), D. L. Van Dine, L. L. McCandless, F. T. P. Waterhouse, C. Montague Cooke, Robert Andrews, J. O. Young, J. M. Tucker, Brother James, and Mr. Fullaway.

President's Address.

Following the reading of a year's minutes, President Judd made a verbal report of the year's work, stating that several things had been accomplished. The question of the introduction of bee-plants from California had been gone into and a number of plants imported, although it was too soon to look for results. It had been the policy adopted to import no plant not of a dual use. It had been found, too, that there were plenty of local plants for bee-pasture, and if none have to be brought in it will save Hawaiian honey from having the strong distinctive flavor of other tropical honey.

The question of tariff revision had been taken up in connection with the Chamber of Commerce and a plea for the maintenance of the present tariff protection urged. There was a quarter of a million dollars now invested in the honey-business, and the profits are small. The National Association was asking for a tariff of 27 cents a gallon on honey and 10 cents a pound on beeswax, and this request was being supported.

So far as known there is no foul brood among Hawaiian bees, and steps had been taken to quarantine imported queen-bees to keep out any specimens of diseased royalty, which would spread the infection. For the coming year, Mr. Judd suggested that the Association take up the question of interesting the local buyers to patronize the industry of the home bees, the object of which would be to put Hawaiian honey on Hawaiian tables in place of what is now imported, and to further protect the local bees from imported bees. Imported honey sometimes comes from districts where bee-diseases exist, and if the home bees should get access to this honey it might result in the introduction of disease in the Hawaiian hives.

Treasurer J. O. Young presented a report of the finances, which was adopted.

New Officers.

The following officers to serve for the coming year were elected: C. M. Cooke, Jr., president; E. C. Smith, vice-president; D. T. Fullaway, secretary, and J. O. Young, treasurer.

Protection Required.

A portion of the letter addressed to the Chamber of Commerce, setting forth the need of protecting the honey industry, read yesterday, was:

"The honey industry is one that appeals to the man of small means. The product is not perishable and can be stored until sufficient quantity is obtained to enable the producer to take advantage of the lower rates of freight that prevail for large shipments. It is an industry that can be carried on independently on a large scale, where the territory will permit, or one that can be taken up as a side-issue in conjunction with other pursuits, where the territory is limited. Not more than 60 percent of the territory of these islands, capable of offering pasturage for bees, is now occupied by apiaries. This industry is being gradually developed and extended, but, as is the case with all minor industries has met with many difficulties and much experimental work has been necessary to determine the best methods of apiculture for the semi-tropical conditions met with in these islands. The Hawaiian Bee-Keepers' Association feels that it is of paramount importance that no reduction in the honey tariff be made. The industry is one along the line that Congress has repeatedly urged those in authority in Hawaii to undertake, and every encouragement should be offered to those engaged in apiculture in Hawaii, to bring the industry to a permanent and profitable basis. Any reduction in the honey tariff would ruin the bee-keeping industry in Hawaii."—Pacific Commercial Advertiser.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

Foul Brood—How to Cure

(Read at the Ontario Convention)

BY WM. MCEVOY.

During the past season I inspected 63 apiaries, and several of these I inspected the second time. I found dead brood in every apiary, and in many apiaries I found a great deal of dead brood in every colony. I was astonished at the mistakes that were made and the reports that were sent to the papers. When will bee-keepers learn to tell the different kinds of dead brood in every stage and form from each other?

I did not find much of the real serpent (foul brood), but I found large quantities of starved brood. This class of dead brood was found in very many localities in the Provinces of Ontario, Quebec and Nova Scotia, and also in very many parts of the United States.

With so many apiaries in this condition, and the alarmists holding up "death's head and the cross-bones," it frightened the bee-keepers, and caused many to worry a great deal over their bees, and then many samples of dead brood were mailed to me. I answered all these letters of inquiry very promptly and saved the most of the bee-keepers from any further worry.

There never was a time when things needed clearing up so much as now, but before going into this I will give some of my experiments and discoveries.

In 1875, when foul brood broke out in my apiary, I did not know what to do to get rid of the disease. I wrote to the best bee-keepers for advice, and all advised me to burn every hive of bees that I found the disease in. I did not want to destroy any colony if I could by any means save it, so I went in to do my best to cure if possible.

Everything I did at first ended in failure. I then took all the combs out of several brood-chambers and filled them with white combs that never had brood in, thinking that this might result in cure. All these would have ended in failure if I had not made one very important discovery, and that was the testing of the honey and finding it to be diseased. One colony that I had taken all the combs out of, and had given it a full set of dry white combs, became a little restless, and, thinking that something might have happened to the queen, I carefully spread the combs without disturbing the bees very much, so as to find the queen sooner. I found her all right, and I also found that the bees in the short space of time had stored a little honey in these white combs. I extracted what little honey I could get and fed it to a sound colony, and gave it foul brood at once. This test proved to me beyond every shadow of doubt that the disease was in the honey as well as in the old combs. After that I went in for getting all the honey taken away from the bees after they were given the white combs, and along these lines I cured every case by the use of two sets of combs and the frequent use of the extractor. This was too much work, but it was the best plan that I had found then. It was plain to be seen that all the honey in foul brood colonies was not diseased, because if it were no brood would ever hatch that it was fed to.

I found honey stored in a cell which had a thin crust of foul brood left in it. I took a wire, ran it from front to rear across the comb and right over the diseased cell. I then ran a wire up and down the comb, and also over the same diseased cell. The wires being crossed over the diseased cell gave me a good mark on it. I then took a pin, and with the head of it lifted the honey out of the bad cell and dropped a little of it on the brood in the cells along the lower wire, and soon after the brood in all these cells died of foul brood. I then took a clean pin and lifted honey out of several clean cells and fed brood under the upright wire, and failed to start the disease in any of these cells.

This test proved to me that the honey to become diseased must be first stored in cells where foul brood matter had dried down. When the bees began storing pretty fast I took the combs out of a number of diseased colonies and shook the bees back into the same hives, and then put in empty frames and left the bees to build their own combs. The bees soon made a little comb and then stored part of the honey they took with them from the diseased combs, and after that foul brood broke out again in the colonies that had been the worst with the disease. I took away the little combs made during the first four days and left the bees to build more combs. This made a sure cure in every case. I saved the brood that I took from the diseased colonies and tiered it up on the weakest, and when the most of it was hatched I treated these colonies.

When the honey season was drawing to a close I found a few cells of foul brood in several colonies that were full of good brood. I worried a good deal over this, because I saw that it was going to be pretty late to get curing done by comb-building in the fall when the brood was all hatched, even if I could get suitable weather to feed sugar syrup while the bees were building comb. And on the other hand I also saw that if I destroyed all this brood, that I would have nothing left but the old bees to go into the fall and winter with, and that the most of these bees would "peter out" with old age before spring. I saw that I had to have all this brood hatched so as to get plenty of young bees to go into winter quarters with. I also saw that I had to get all these colonies cured before winter. Now how was this to be successfully done and have all colonies brought into spring in grand condition?

After some more study, I thought of another plan, and that was to feed the sound colonies abundance of sugar syrup, and by so doing get the bees to fill and seal every cell in the outside combs right down to the bottom—a thing they did do. When this was done I took these outside combs out which were full of all-capped stores, and saved them until an evening in October when the brood was all hatched out of the combs in the diseased colonies. I then took the combs out of the diseased colonies, shook the bees off them and put in the sound combs of all-capped stores, and, these not having any place in them for the bees to store the diseased honey which they took out of the old combs, the bees had to consume it. This made perfect cures in every case, and the colonies that were given the all-capped stores came into spring the best of any in my apiary.

These methods of treatment by which

American Bee Journal

I cured all of my colonies in 1875 were all of my own working out. I never got any instructions from any one. My methods of curing diseased apiaries, which I have so often written up, are too well known to need repeating. Big crops of honey have followed my curing in all parts of the Province. I will here mention two of these.

In 1888, I myself cured 40 colonies for Mr. James Marshall, of Binbrook, that had foul brood, and in 1889 he took 8,000 pounds of extracted honey and increased to 62 colonies.

In 1898, I cured an apiary for Mr. J. B. Hall, of Woodstock, and in that same summer he took an average of 140 sections of comb honey per colony, and left his bees abundance of honey to winter on.

Before, and for several years after, I was appointed inspector, foul brood colonies were shipped in the most wholesale way into 37 counties in our Province, and from these the disease spread to nearly all the apiaries in the localities it was shipped into. The people had to be taught how to cure, and I was in duty bound to give the bee-keepers every possible chance to do so—and did. To Mr. Gemmill belongs the credit for saving the whole bee-industry of Ontario, because, if he had not taken hold and got his Foul Brood Act passed when he did, the disease would have destroyed nearly every apiary in the 37 counties which I found it in.

The springs and foreparts of the summers of 1889, 1895, 1907 and 1908 have been followed by a lot of dead brood being found in many localities in Ontario, Quebec and Nova Scotia, and also in very many parts of the United States. This class of dead brood is the result of the seasons, kind of bees, and neglect of man.

I was pleased to hear Mr. House, of New York, come out so strong in our convention in favor of the "yellow bees." I judge that Mr. Wright, who is one of the inspectors for New York, is also an advocate of Italians for keeping brood-chambers clean and free from dead brood. I never found any race of bees that was as good as pure Italians to feed their brood. The following letter which I received shows the good work that Mr. Wright is doing in the black brood district in New York State. I intended to go fully into the classes of dead brood found in so many places, but it would take too much space here. I must leave it till another time.

Woodburn, N. Y.

ALTAMONT, N. Y., OCT. 31, 1908

Wm. McEvoy, Woodburn, Ont.—

MY DEAR MR. MCEVOY:—Yours of Oct. 26 was duly received.

In reply I will say that the case of "European Foul Brood" (formerly "black brood") which I mentioned to you as having been successfully treated was this: The party had an apiary of 44 colonies badly affected. The bees were hybrids (a mixture of Italian and black races). They were shaken twice, the latter part of June or first of July. The last time on full sheets of foundation, and all Italianized soon afterward. (I forgot to mention that they were doubled down to 22 colonies at the time of shaking.) The season proved very poor in that locality, so that the shaken colonies stored but little surplus, but filled up nicely for winter. This was in 1907. Last spring the aforementioned colonies (22) came out in good condition, have been increased to 44 colonies, and gave 2,500 pounds of comb honey, which is the largest yield I have heard of this year in York State. No disease has been discovered in this apiary this season.

I also had another case this season treated in the same way, about June 1st. Apiary contained 70 colonies; about half were diseased, but owner concluded to make a clean sweep, and treated them all, reducing number of colonies to 50. These have given fairly good results in surplus, and no recurrence of the disease. The honey-yield in that section was light this season.

I am sorry that there is any friction between the Canadian brethern, but I find that an inspector will sometimes incur the dislike—if not the hatred—of a certain bee-keeper, especially where it becomes necessary to resort to extreme measures. Nevertheless, duty, with us, must stand before friendship.

I am very glad to have met you and so many other Canadians at Detroit, and hope to meet you all again.

Very truly yours,
W. D. WRIGHT.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Some Big Southern Bee-Keepers.

MR. LOUIS H. SCHOLL:—That 40,000-pound crop beats me some. I might have had as great a honey-harvest had I devoted my entire time to it, but I placed nearly one car of bee-supplies, reared and sold nearly 400 queens, packed and shipped about 60 colonies of bees, and made about 300 colonies increase. I have taken off about 20,000 pounds of chunk and extracted honey, and have about 3,000 pounds more to take off. I have done all the work except extracting. My bees are in 16 apiaries about 3 miles apart, and from 50 to 100 colonies in an apiary.

Some few bee-keepers in the South may have realized a large amount of profit from their bees, but I materially doubt whether any one has done more work than I have.

All my apiaries are arranged within 15 miles of my home, except 2, which are on the railroad, 25 and 30 miles away. Four apiaries are 15 miles away, and it takes 4 trips to get around, and during the rush I was to the extreme apiary by sun-up, ready for work. From this apiary I made my round back home, and it was about 9 o'clock when I arrived. I find that I can handle a few more colonies each year by learning shorter cuts, and that the greater number of colonies operated, the greater the profit.

I have visited all the leading bee-keepers for 200 miles around, this season, who have not visited me, and we have had a good time giving the little honey-bee much consideration. Our bee-keepers are not enterprising enough; too willing to sit down with a few bees. Then they have not been considerate enough in locating. Only a few bee-keepers are branching out or establishing an extensive bee-business. Only a few are following it as a sole occupation. But as a side-issue it is making progress in almost all sections. I think Texas is adding to her list of "big" bee-keepers continually. I wish we had a few over here to wake us up, for we are surely sleeping over our rights.

Crisp Co., Ga. J. J. WILDER.

All the big bee-keepers are not in Texas, for you've done well, too, "for a Georgian." Since making the 40,000-pound report, we had a good late summer and fall flow, which increased our own crop to over 50,000 pounds. Besides, over 10,000 pounds of extracted honey was bought to pack with a great part of the above honey, which was mostly comb honey, and then sold again as bulk comb honey. I might say, however, that about 6000 pounds of the above crop could not be taken off, as I was engaged two months with exhibit work, as superintendent of the apiarian department of our large fairs, and it was too late and cool to extract. As we must arrange for an output of at least 75,000 pounds of honey to supply our demand this year, the honey now on the hives will be turned into several hundred colonies of increase.

Our aim is not how much we can do, but how much profit we can make while doing it. We had the help of several inexperienced young men several times during the season, amounting all in all to about 3 or 4 months. But we also find, as you do, that a person can handle a few more colonies each year by learning short cuts. Therefore, Mr. Hutchinson well says that "more bees" will mix better with bees than anything else. This is a valuable point. That visiting of those bee-keepers is another valuable point. Such letters as these, giving one's experience generally, have a stimulating effect, hence are valuable.

* * *

Holy Land and Cyprian Bees—Three-Band Italians Best.

Are the Holy Land and Cyprian bees the best all-purpose bees for the average bee-keeper?

This could be answered with one little word, "No." The Holy Land and Cyprian races of bees, from their irritability, in my opinion, can never become favorites with the bee-keeping world. Never can they be classed as all-purpose bees. After 2 years' experience handling a yard of Cyprians and their crosses, they were discarded. Their stinging punishment was simply unbearable. However, these were fine honey-gatherers, strong breeders, and extra prolific.

Five years later, on the recommendation of a friend, I procured from a breeder in the United States, a half-dozen queens of the Holy Land race, fearing lest those, too, like their cousins, the Cyprians, might be too obstreperous for comfortable manipulation. The bees were tested very carefully for the first season, and, finding that they lacked much of the vicious temper of the Cyprians, and seeing much of merit in these bees, by careful handling were very satisfactory, both in temper and results.

In later years a fresh importation came from Jerusalem. From this imported mother, without thorough testing, a large number of young queens were reared and introduced into the Holy Land yard. This late importation, while they proved themselves extraordinary as honey-gatherers, and were beautiful in their markings, at the same time were the most wicked bees to handle that I have ever seen, not even excepting the Cyprians. There were times and conditions when these bees could be handled with impunity. At the cessation of the honey-flow, when brood-rearing would wholly or partially cease, those bees could often be handled without smoke or veil, remaining quiet on their combs while being handled by the operator, and, exposed to almost all manipulations, would keep their temper.

In comparison with the Italian bees I would unhesitatingly say that for an all-purpose bee, considering gentleness, honey-gathering, prolificness, beauty in markings, general domestic habits, there is no race or strain of bees that will equal the best strain of 3-banded Italians.

I will sum up by saying that with 2 years' experience with Cyprians, 8 years with perhaps the largest yard of Holy Lands in the United States—150 colonies—I have decided to discard all but the Italian race, which I recommend as a general, all-purpose bee.

Bee Co., Tex. W. H. Laws.

This is a question that has been asked often, and my experience is the same as that of Mr. Laws.

* * *

Length of Queen-Cells.

Does the length of the queen-cell have anything to do with the queen, as to length of life or her laying powers? I am of the opinion that it does not. What is the cause of the length of the queen-cell, anyway? I reared many queens last year and found it to be true in every case with me, that the age of the larva determined the length of the cell. Well, not altogether, either, as some colonies would naturally make longer cells than others.

My observation was that every cell started on very young larva was drawn out long, while those started on larvæ several days old were capped short; and that those queens started on one-day-old larvæ were fed several days longer than those that were older. The continuous feeding of the younger larvæ necessitated the lengthening of the cells to accommodate the surplus amount of feed given before the queens became old enough to seal, while the older-larvæ queens required only a short time before they were old enough to seal up in the cell. In every case the queens were properly fed, and all hatched out good queens.

I also noticed that neither the length of the cells nor the age of the larvæ used determined the length or the size of the queens. Many of the queens hatched from the short cells were long and large, while many of those hatched from the long were short. When laying began some of the short queens would beat their long sisters laying. So I determined that a lot of stuff printed relative to queens is all bosh. I am "from Missouri," and will have to be shown.

T. P. Robinson.

Bartlett, Tex.

Contributed Articles

Something About Big Hives

BY C. P. DADANT.

Leon, Iowa, Nov. 21, 1908.

Mr. C. P. Dadant, Hamilton, Ill.—

Dear Sir:—I wish you would tell in the American Bee Journal the difference between the Dadant hive, the Jumbo hive, the Draper Barn, and the Dadant-Blatt hive. Most bee-keepers are probably familiar with the Dadant hive, as its dimensions and construction are given in the revised edition of "Langstroth on the Honey-Bee." I will say here that rabbeting the lower edges of the sides of the Dadant hive is useless work with me, as I am never troubled with the bee-moth in hives containing bees. I make bottom-boards so that the lumber runs the long way of the hive, and extends 3 or 4 inches in front. My impression of the Jumbo hive is that it is made the same as the 10-frame Langstroth hive, except that it is made deep enough to take Quinby frames.

The Draper Barn I have never seen described, and so have no ideas concerning it.

My impression of the Dadant-Blatt hive is that it is made one inch shorter than the Dadant hive out of lumber 12 inches wide, and that in other respects it is made like the Dadant hive; hut in this I may be wrong.

I will add here that I believe Dr. Miller at one time tried one Jumbo hive and that he had a swarm from it the first season. This seems to have taken away the Doctor's desire for big hives. In the early days of my bee-keeping I had a big swarm from a Dadant hive—so big that I did not know what to do with it, as I was poorly supplied with knowledge of bees, and with appliances for handling them. Since that time I have had scarcely any swarming from Dadant hives, and I have had some of them in the yard every season.

Edwin Bevins.

The Draper Barn and the Jumbo are one, with the only difference, if I remember right, that the Jumbo is built with dovetail ends and in its details is the same as the Langstroth Dovetailed hive, except that its frames are 2⅛ inches deeper than those of the regular Langstroth hive. These hives have frames of the same size as those of the Dadant-Blatt hive.

Mr. Dadant senior adopted the Quinby frame hive in 1865, or about that date. The Quinby hanging frame is both deeper and longer than the Langstroth. The senior Dadant then added some improvements, increased the number of frames to 9, with 2 dummies or division-boards, one on each side. We have since used the hive with only one dummy and 10 frames, but I believe the former number is the best. The rabbeted lower edges of both sides and double rear board are useful in several ways. They exclude dampness, robbers or moths. But they prevent the tiering up of hives which we never practice. Our upper stories are uniformly half stories, which are however a little more than half the depth of the lower, as the frames are 6⅜ inches deep.

The Dadant-Blatt hive is made almost exactly like the regular Dadant, only its frames are of Langstroth length and of Dadant depth. This was done at the suggestion of Mr. Dadant senior, to be able to exchange supers with Langstroth hives, and also because he thought the Quinby frame a little too long. Yet we have had better success with those long, deep frames than with any others, for we tried many different styles on a large scale.

It may be necessary to say here that the Dadant ideas in hives have never been patented, and that everything that we use, or have used, is, and has always been, free for all. That is why I do not feel that I am in any way intruding upon the reader by giving a description of the hive.

The Jumbo hive, like the Dovetailed and nearly all the cheap hives sold nowadays, is made in plain stories, which are tiered up as needed, without any covers other than the flat top. Our hives, like the Dadant-Blatt, are made with a cap telescoping over the body about an inch and resting on cleats. We think so much of this cap with telescope that we would not accept the ordinary tiering hives as a gift if we had to use them. Yet I am very free to say that not one apiarist in a thousand sees this matter as we do. We think that the telescoping cap makes the hives warmer, safer against robbers, mice, etc., especially when they have been in use many years. We are in a great country for propolis, and our bees glue the different stories together so well, during the latter part of summer, that a chisel or hive-tool has to be used to separate them, and after a few years, use the top edge of the hive-body and bottom edge of the super have become damaged enough sometimes to allow robber-bees, ants and vermin, to get through the crack. This also allows the heat to escape. The telescope cover obviates this and makes the hive tight, for the cover is never reached by the bees and glued. The only time when the upper joints are exposed is when we tier up 2 or more supers, and at such times the colonies are always strong and harvesting honey, so that the perfect joint is not needed so badly. We have had some hives in use for 35 years and it is quite important to have a system that permits the use of the same boxes under all circumstances.

That the system does almost entirely away with swarming is evident, not only from our experience and that of Mr. Bevins above recorded, but by the testimony of bee-keepers all over the world. The size of the hive alone is not sufficient to abolish swarming, but the system followed, joined to the greater comfort derived by the bees and queen from the ample space under their control, gives as safe a system of honey-production without swarms as can be had under any circumstances. When swarms do issue they are exceedingly large. This is acknowledged on all sides.

I have lately paid a visit to an apiarist, who has followed our methods for over 30 years, Mr. I. N. Arnold, of Iowa. This man follows our methods better than we do ourselves, for he does what we say should be done, properly, carefully, and with great accuracy. He is an enthusiast of the large hive and the non-swarming system, which have paid him handsome profits.

As a matter of course, the large hives are better adapted to the production of extracted honey than to that of comb honey, yet there are large comb-honey producers who succeed with large hives. The only requirement is to reduce the hive, or "contract" it, as they call it, at the time of clover harvest, to the actual space occupied by the bees and queen, in order to secure most of the surplus in the sections.

As a wintering hive, the large hive is ahead of others. Yet, say what we may, the great majority of apiarists will take small hives in preference, owing to their small cost and more immediate results.

Hamilton, Ill.

Unfavorable Season—Queen Losses

BY F. L. DAY.

When I wrote in the February (1908) number about expecting to be master of the situation in my new woodland location, I had reference to the difficulties connected with swarming in such a location. I did not know then that I should have to contend with poor wintering, spring dwindling, a poor honey season, and a perversity of things in general, the like of which I had never before seen in my bee-keeping experience.

To begin with, my bees wintered poorly. Ten percent died in the cellar, and about 10 percent more inside of a month after taking from the cellar. 20 percent loss is too much for a sure winterer, but then it was not a good season for that class of bee-keepers, as J. L. Byer, of "Canadian Beedom," has testified. The principal cause of my loss was the almost total dearth of honey-flow the previous season after July 20th. This caused a good share of my colonies to stop brood-rearing a month earlier than usual. This made the clusters smaller than usual, and deficient in young bees for wintering. A number of the colonies which died after taking from the cellar, had begun brood-rearing in good shape, but the old bees all died before the first lot of young ones hatched.

WINTER BROOD-REARING.

I was much interested in what Mr. Byer wrote in the April number about the amount of brood found during the winter, but my experience is just the opposite. During the first years of my bee-keeping I examined my bees later in the season than I have recently. I found that though the queen in each hive would continue to lay a little after October 1st, yet in no case would the bees feed and rear any larvæ after that date, or even after September 15th in some colonies.

Last spring I took 54 colonies from the cellar. One was queenless, but the other 53 had at least a few eggs in each hive. Some of the medium colonies had in addition a few larvæ, and in rare cases, as many as a dozen cells of sealed brood. I had a few extra-strong colonies, which I expected to find further advanced in brood-rearing, but to my surprise none had anything but eggs. I have never made any midwinter examinations of my bees, but from spring and fall examinations, I am fully satisfied that they never rear any bees from October 1st to March 15th.

LOSS OF QUEENS.

Among the many disasters of the past season, none caused more loss and vexation than the surprising persistency with which my queens disappeared without apparent cause. This applied first to those that had come through the winter, and later on to young queens obtained from the South, and still further on in the season some reared from my own best stock. Those that had come through the winter would have 2 or 3 combs fairly filled with eggs and brood before disappearing. I obtained 30 untested Italian queens from a Southern breeder. Only 3 were lost in introducing, but a number of the others were missing 3 to 4 weeks later, after having 3 to 5 frames well stocked with brood. It seems incredible that the bees would kill them after they were so well established in brood-rearing, but I can assign no other cause for their loss. I have been clipping all my queens for 6 years, and never before the past season have I seen that any harm came from it. But at least 2 fine queens were missing from the very day that I clipped them.

I have 4 queen-mating nuclei, using the same size frames as my full colonies. For years I have been taking the frame of brood and bees that I found the queen on in one of these nuclei, to place in a full colony when a queen was needed. Never before this season had I lost a queen introduced in this way, but this year a good many were lost in this manner. Colony number 13 had, at the last examination, its 7th queen. There had been 3 laying and 3 virgin queens before. The three laying ones each had from 3 to 5 frames full of brood before disappearing. Other colonies had 3 to 5 queens each. The difficulties of bee-keeping under these circumstances can easily be imagined. If I had had a queen-breeder for a neighbor he would have found me a good customer.

THE SEASON'S GOOD ENDING.

We are inclined to consider those lives of our fellowmen happiest, which end in peace and prosperity, even though their earlier portions may have been vexed by the storms of adversity. So with the bee-keeper in his annual struggle to wrest at least a scanty crop of honey from stern Nature, it seems best to have the disasters come, if they must, early in the season, while there is yet the hope of a harvest to cheer him on. This was my case last year. The spring brought only disaster. Even in the last week in June when my bees are usually storing surplus from clover, last season I had to feed them to prevent starving. It was not until basswood came in full bloom about July 20th, that they began to store in earnest. I managed to get about 60 pounds per colony, for which I was very thankful in so poor a season. Nearly all colonies also secured from fall flowers sufficient for winter stores.

I put 81 colonies into the cellar November 13—2 weeks earlier than for a number of years.

Detroit, Minn.

Transferring Bees—A Bee-Tree

BY R. M. LOCKIE.

There is no use for me to say I am a beginner in the bee-business, for you will know it after I relate my experience with them. About 10 months ago I bought 6 colonies of bees, paying 50 cents each for them. They were just bees, and were in small, home-made boxes with two sticks across the center for frames. I went one evening to an old orchard to get them, and found one so full of bee-moths that I left it, bringing only 5 home.

No. 1.—Two Swarms On a Hive.

When peaches were in blossom I started to transfer the bees to standard hives which I had made. When all was ready I tried to drum them into a box. Drum! I had just as well drum on my head for all the bees I could drum into that box. "I will make you fellows come to time," I thought, as I secured my hammer and cold-chisel and cut open the box. As fast as I cut away the crooked comb I dumped the bees in front of the new hive. Soon they began to go in, but I could not find the queen. After I had carried away all the refuse I returned to see what they were doing, and saw them rushing out faster than they went in. I removed the cover of the hive and it was practically empty. I looked about to see what had become of my bees and was surprised to see them settling on the next hive. I left them there and proceeded to transfer another. This time I made a worse failure than at first, for I could not induce them to enter the new hive at all. I also failed to find the queen. After flying about for awhile the bees settled on the same hive with the other swarm. By this time the bees were so thick on the hive that they blocked the way for the ones that lived there.

I made what I called a "reducer;" that is, a false bottom which makes the big bottom of the new hive fit on the small top of the old hive. And after placing the new hive on the old one I photographed it, which shows both swarms clustered on the outside of the hive. This photograph (No. 1) I send to you. In less than 4 hours the bees were all inside, and then I put on a super. The other 2 I did not try to transfer, but made more reducers and placed the new hives on the old ones.

No. 2.—Stump as It Now Stands.

By the first of August I had one super full of nice honey from the hive in which there were 3 colonies, but the other 2 have not put any honey in the supers yet. We have had a very poor honey season so far, and can't expect much. I am very busy now with my crops so I will have to neglect the bees for the present, but will do better next year, for I am too fond of honey to give up a good thing.

More than a year ago while hunting in the Mokelumne river bottom, Henry Merrill and I found a bee-tree. It was a huge willow-tree, that was dead. The bees could be seen in and out of a hole in a big limb high up in the tree. We were not prepared to cut the tree that day so agreed to wait until the next week. Before the appointed time, however the river had risen and flooded most of the bottom land, including where the bee-tree stood. Following this was a heavy wind-storm which blew down our bee-tree — at least it looked so to us from the the shore. The river kept rising until the water was higher than it had been known before for years. This was the same high water which did so much damage in California a little over a year ago.

No. 3.—Bee-Log Almost Hidden.

When the water went down we visited the bee-tree and found about 25 feet of it still standing. The top with the bees had been broken off and washed away. Of course, as we thought, that settled our bee-tree.

No. 4.—Limb from Which Honey Was Taken.

This spring the river was low as it was high last spring. One day in February we came across the top of our bee-tree which was high and dry. It had been washed down stream about 200 yards, and had lost its top and smaller limbs. We investigated and were surprised to find that bees were still in the same big limb. These bees were not molested until after fruit-blooming time, and then they were robbed. We took about 3 pounds of the old and a pound of the new honey from the limb.

Now, could it have been possible for those bees to stay in that log during the high water, or had another swarm taken possession of it after the water had gone down?

The photograph No. 2 shows the stump as it now stands. No. 3 shows the log where we found it, which is almost hidden from view by the dense growth of weeds and brambles. The boys in this picture are standing just back of the log. No. 4 shows the limb from which the honey was taken.

Lodi, Calif.

Regarding Hives for Comb Honey

BY G. M. DOOLITTLE.

It was from 54 to 56 years ago when my father purchased the first colony of bees I can remember anything about. This colony was in what was then called an "old box-hive," being made of rough hemlock lumber, using inch thick boards, just as they come from the sawmill. The neighbor, living 2 miles distant, together with my father, brought the colony home between them, with a sheet around the hive and tied at the 4 corners, through which a pole was thrust, and the pole resting on the shoulder of each. In those days no other way of moving bees was known, as reports were rife, that to move them on a wagon (no spring wagons in those days) was sure to break the combs and thus spoil the "skep," as a hive containing bees and combs was then called.

When the sheet was being untied preparatory to leaving the bees where they were to make their new home, I was the most anxious spectator of the lot, and I remember asking if it required such a great, big house for such a thing as a little bee. It was explained to me that there were thousands of bees in that "house," but some way I could not help thinking that the hive was too big for such little things as bees were.

The colony it contained cast but one swarm that year, and, as father wished increase, so that he might have several colonies, he was disappointed, and told another bee-keeping neighbor about his disappointment. This man told him that the trouble was that his hive was too big, as large hives did not send out nearly as many swarms as did small ones; so that winter he made much smaller hives for the expected swarms of the next summer; and as these new hives gave a larger surplus of "box" honey from the new swarms, he continued to make small hives for the next few years. Then there came a poor season, when, the next spring, all except 3 colonies were found dead from starvation, and 2 of those alive, and as strong colonies as we ever had in any spring, were the 2 in those old, big hives.

When I commenced to keep bees for myself I measured the only one of those old, big hives which had been piled away and kept for use as a sort of "step-ladder," and found it contained about 3,000 cubic inches, while the bee-books of 40 years ago were claiming that 2,000 cubic inches was the right size for a hive. So I started out with 2 of the big hives and the rest of the 2,000 cubic inch size. I soon found that there was little difference regarding the wintering problem to be found in the size of hives, so long as the bees had a sufficient amount of stores where they could be near them during the extreme cold of winter; and, as the large hives, after each good year, contained 50 or 60 pounds of honey in the fall, or twice as much as any colony needed for winter, said honey being from clover and basswood, or that first stored, I was not only losing the sale of the best honey, but losing otherwise through it going into combs in these big hives during the first of the season, so that the bees were loth to enter the boxes later on.

From this I decided that such large hives could not be profitable to the producer of section honey. Consequently I went to the other extreme, until I used a hive holding only 9 frames 10¾ by 10¾ inches square for a brood-chamber, these frames being surrounded at the sides and top with sections. Then I went so far as to cut many of these brood-chambers down to 6 frames, by using dummies on either side to take the place of 3 frames, and supplied the colony with winter stores by putting in frames of sealed honey from the buckwheat and fall flowers. In this way I secured nearly all of the white or more salable comb honey in the sections, while the colonies wintered on the dark or less salable honey, securing good yields year after year, and wintering quite successfully where the colonies could be put into the cellar during the months of cold weather. New swarms, especially, would give a surplus of section honey of the most fancy kind where hived in these small 6-frame brood-chambers, and where any one can spend the requisite amount of time that such small hives require, good results can be obtained, though I think that a longer frame not more than 6 or 7 inches deep would be preferable to the 10¾ square, or the Gallup frame which I used so long.

But with the advent of the out-apiary, there came a change in my views, for no such an amount of time could be spent where an apiarist had several out-apiaries, as was required with these small hives; so I finally adopted the 10-frame Langstroth hive as the right size for out-apiary work. With this 10-frame hive I have a brood-chamber of about 2,200 cubic inches, which allows an abundance of honey for wintering, where the colonies are worked for section honey, while, with plenty of honey in the hives for early spring use, the colonies boom ahead with brood-rearing much faster than they do in the small hives with starvation "looking them in the face," only as the apiarist sees that they are supplied from week to week.

Then for the out-apiary, non-swarming is a very desirable thing, which cannot very easily be attained, even in the home apiary, with the small hives, so that they are out of the question where one man has several apiaries to look after.

With the 10-frame hive of the Langstroth size, if another of the same size is placed above the first, as soon as it is filled, or nearly so, with brood, with a queen-excluder between the two, the upper hive can be quite well supplied with combs of honey left over from the season previous, so that the colony will feel no need of retrenching their brood, while at the same time the two 10-frame hives give so much room that there will rarely ever be any desire to swarm before the opening of the clover bloom. Then, at the opening of this bloom, this top hive of combs, quite largely filled with honey that they may have stored, together with that given them at the time of putting on the upper hive, can be set down on the stand, all the bees shaken out of the lower hive and from their combs of brood, allowing them all to go into what was before the upper hive, the sections being put on at this time, when the larger part of the honey these combs contain will go into the sections, as fast as the queen needs the room for her egg-laying powers. Thus all swarming will be done away with, while a yield of section honey can be obtained beyond anything I had known up to the time I struck upon this plan of working hives, and that with the least possible labor necessary when working for section honey.

As the bees have been at work in the upper hive for some time before it is set down on the stand, it has become their home, so that they are as much at home as ever after being shaken, going at once into the sections, the same as they had been in the habit of going into the upper hive.

In this way rousing colonies are obtained in time for the harvest, going into the sections at once; and, with no desire to swarm, a great surplus is rolled up for the apiarist, with little work. The combs of beeless brood are given to weaker colonies.

Borodino, N. Y.

Helping the Sale of Honey

BY DR. G. BOHRER.

Under the above caption, on page 334 (1908), Dr. Miller asks me a number of questions, upon all of which I have expressed my views in former articles, if memory serves me correctly. I will, therefore, recapitulate as briefly as possible in substance what I have said, or aimed to say, heretofore; and will, so far as I am concerned, dismiss the subject for the present at least. I will also say that I have no ax to grind. I am not in the bee-business for either financial gain or notoriety, as I am too far advanced in years to think of managing a large apiary, being nearly 76 years of age. And at this period of life, it is scarcely to be supposed that I should thirst after fame. To keep myself pleasantly employed, my life having been a busy one, and having a beautiful farm that I improved as a soldier's homestead, upon which to pass the remainder of my days, I still feel it a duty to learn all I can about the pursuit of apiculture, and, if possible, to aid others who may desire to become bee-keepers; for among all the industries engaged in by mankind, apiculture has been the most slighted, nearly all the legislative bodies of the world having given but little aid or encouragement to its advocates, devotees, and admirers; and Dr. Miller, and all interested, may rest fully assured that I will throw no obstacles in the way of a ready market for the well-earned products of the apiary.

I deem it no injustice to bee-keeping to tell the truth, and the whole truth, concerning the properties of honey and beeswax, as far as I understand them. I did state the *fact* that beeswax possesses no nutritive properties available to the human system; that as a laxative or carthartic proper, it never was, is not now, and in all probability never will be, recognized by standard authorities upon the properties of medicines; and that whatever effect it may exert as a laxative, is wholly due to its irritating effects as a foreign substance, being entirely unassimilable, and can not on this account, if on no other, act through the organs of assimilation and excretion, as cathartic medicines do. I also stated that to say the most in favor of wax when served in the shape of comb with honey, it is simply ornamental; and I will now in this connection say that a great many persons, notwithstanding the foregoing facts, will purchase and use comb honey as food, just as many persons buy and wear tight shoes even at the risk of rearing an interesting crop of corns. But it is but proper to state that honey in the comb is not used as food in quantities sufficiently large for the wax to do much harm.

I also stated that a few persons can not use comb honey as food, on account of the fact that it produces spasmodic colic, which is due to bee-sting poison, which is spread over all the exposed surfaces of the combs of all colonies of bees. This is not a new idea of mine, for as long ago as 1866, I had a talk with Mr. Langstroth at his home in Oxford, Ohio, and, among other matters, bee-sting poison being deposited upon the combs of the hive was mentioned. Concerning it he remarked, "What a fine thing it is that so few persons are susceptible to its influence."

I have stated that the uncapping-knife removed this bee-sting poison, and that in all probability, persons who can not eat comb honey may use extracted honey without experiencing any unpleasant symptoms. I also stated that extracted honey can be produced in larger quantities with less labor and less expense than comb honey, and that in the extracted form it is in the most wholesome shape as food.

As to whether bee-sting poison is spread over the surface of the combs as a vapor, or whether the bees deposit it directly on the combs by traveling ove. them, is not important for practical purposes. And as to increasing the sale of honey, I stated, or meant to state, that the pure food law, rigidly enforced, is doing, and will continue to do, more to increase the sale of honey, both in the comb and extracted forms, for now people who believe that comb honey is manufactured by machinery and filled with artificial honey, and sold as pure honey, are seldom ever found. And they are also rapidly learning that when extracted honey is labeled "Pure Honey," it must be such. I think that no one knows better than Dr. Miller that many people have, for years past, refused to buy honey on account of its being thought that pure honey was very difficult to obtain. With this difficulty out of the way, the sale of honey ought to increase very largely, and I believe it will.

Dr. Miller also asks how I know that all the bees in the hive thrust out their stings when their hive is materially jarred. In answer I will state again what I thought I had stated heretofore. During the sixties I had one of the large Langstroth observatory hives in use. When the cover was raised three sides of the brood-nest were exposed to view. During cool days I often raised the cover, and as far as I could see every bee in sight would thrust out her sting, and a small particle of fluid could be seen on the point of each sting. So that I feel quite safe in reaching the conclusion that every worker-bee in any hive will, and does, resent any and all such disturbances of their home. And when the poison is thus thrown out in the hive it is not at all likely that it is entirely removed from the hive, but reaches the surface of the combs, and as the process of evaporation is constantly going on in the hive when honey is being stored, it is not likely that any poison is ever combined with the honey in the cells, and it is almost absolutely certain.that the bees never dip either their feet, body, or wings into the unsealed honey in the cells.

Now, if Dr. Miller or any one else has a better solution of this question, no one will be more ready to accept it than myself. For actual facts are what I hope all of us are in search of, as nothing short of this method of dealing with unsolved problems will ever place the industry of bee-keeping on that high plane that it merits and the wants of humanity demand.

Lyons, Kans.

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No. 2.—Bee-Keeping in Colorado

BY R. C. AIKIN.

Wintering Bees in Colorado.

In last month's article I mentioned something about the very dry climate of this country. I have lived in the Missouri valley—rather, I should say, in the Nodaway valley, which is a tributary of the Missouri and of course is a part of the great valley—spending over 25 years there. I know what it means to meet and be cut and chilled by the damp penetrating atmosphere of those lower and moisture-laden climates. I know what it means to have not only days of cloudy and partially cloudy weather, but weeks at a time. I can recall one winter when bees on the summer stands did not have a flight for about 5 months, and when they did fly it was a case of swarming-out, queens and all, and piling up together, clustering on hives and anywhere, and I had to separate as best I could and hive again. The sad part of it was that the great majority had "gone where the woodbine twineth," and have not yet returned.

But you say that was an extreme winter, and it was; but a winter there that bees would fly the most would not fairly represent one here in which they flew the least. The range or extremes of temperature in Colorado are *about* the same as the same latitude in the Missouri or Mississippi valleys, but the changes here are more rapid and abrupt. I am writing this on the evening of Nov. 11. Bees flew quite freely on the 8th and 9th, and the mid-day temperature was 50° and upward. The 10th it snowed, and this morning the temperature was 4° below zero. Today was partly clear, and mid-day temperature well nigh the freezing point, and if tomorrow should be clear and calm we will probably see mid-day temperature of about 40° to 50° in the shade. I have just looked at the thermometer on our back porch, and it is at only 6° above zero at a few minutes before 9 p. m., and will probably be about zero in the morning. Between 8 a. m. and 12 noon it will probably rise easily 40° should it be clear, and, if so, bees will be on the wing by noon. We have just such rapid changes here, and lots of them, too. And bees will fly when the temperature gets above freezing if it be calm and the sun strikes the hive. They fly here at a lower temperature than in the more damp climates.

(Later—This is noon the 27th. Since the 11th inst. there have been only one or 2 days when it was below freezing all day. Morning temperature would be from the freezing point to within a few degrees of zero, and the mid-day 40° to 60°. All snow melted except a few spots in the shade north of the house. Five inches more snow feel 3 days ago, and is still on the ground, but melting. At daylight this morning the temperature was 2° above zero; now, at 1 p. m. it is 34° in the shade on the north side of the house. Bees have flown 3 or 4 days out of the past 10 days.)

But it makes all the difference whether the bees are in the sun or shade. I have seen bees resting against the hive front, and even coming out on the alighting-board with the sun shining on the hive front while in the shade the thermometer was at or near zero. A colony kept in the shade will perish of cold while one exposed to the sun will come through the winter all right. The reason for this is that the dry atmosphere does not penetrate or lay hold like a damp one. The Easterner knows how a damp air without sunshine is most oppressive in both heat and cold. Well, here our very dry air does not penetrate or convey either heat or cold, and the colony of bees in the shade on the north side of the house gets cold, and stays so, and it takes a whole lot of warm wind to warm it unless the sun strikes it. Likewise the hive that got the sun during the day got a good warming, and it takes a lot of cold wind to get that heat away from it, so it is fairly comfortable through most of the night. To know how hot or cold it is in Colorado we look at the thermometer—the mercury tells the tale regardless of moisture in the air.

You will want to know what all this has to do with the wintering of bees: It has much to do with it, and if you do not think so just try wintering a few colonies where they will be continually in the shade as against an equal number in a sunny nook. I have wintered some in chaff hives for about 15 years, and from 50 to 75 colonies, and larger numbers in single-wall hives. Unless the chaff hives have very strong colonies so that the animal heat of the mass warms the whole interior of the hive: or unless the hive be so placed that the sun can strike it with full force so as to penetrate both walls and the packing, reaching the interior, the bees in the packed hive do not winter as well as in the plain single-wall one.

Let me give another illustration or two that show how little penetrating power the atmosphere has, so that a place that gets cold stays cold, and likewise a warm place stays warm, that is, out of all proportion to the moist and more dense air of the lower altitudes. Almost 4 weeks ago we had a light snow, and following was warm and very pleasant weather, and in all places where the sun shown on it the snow was melted in 2 or 3 days, but on the north side of buildings, or of hay and straw stacks or other things that cast a shade, snow lay for one to two weeks, and that, too, when the mercury was up to 50° and 60°, and I think one or two days was as high as 70°. The sun will shine through a board fence and melt the snow off where it strikes, leaving a streak of snow where the boards cast a shade. Even a barbed wire shadow will hold a streak of snow for quite a little time after it is gone where the unobstructed sunshine strikes. In this country snow will scarcely begin to melt in the sun until the mercury is several degrees above the freezing point, but in the East, when there is dense cloudiness, as quick as the mercury registers 2° to 4° above freezing the snow begins to move.

I expect by this time many readers will begin to think this altitude with its light, dry atmosphere has affected my head, and I am getting a little "off in the upper story." I want to tell you that most of us here have found out that a colony of bees in an old, warped and twisted cracker-box with cracks all around the top that you can scarcely chink tight enough to move without putting the whole thing in a bag or have the bees leaking, will winter better than one with equal stores and bees in one of the best made hives that can be put up. The reason is that the box lets off all moisture exhaled by the bees, keeping the colony dry all the time, while in the tight hive the moisture condenses within the hive into frost when cold, then melts and wets bees, combs and honey, and sours the honey.

For wintering here I think there is nothing better in the way of ordinary protection than to set the hives either against each other or within 2 or 3 inches, close to the ground, and facing south or southeast. Have a bed of say 2 to 4 inches of chaff beneath, 5 or 6 inches behind (a foot or more behind will be all the better), and on top from about 2 or 3 in front, to 5 or 6 at the back. Leave the front end of the hive so the sun will strike it direct. Before packing on top lay 3 or 4 sticks about 1 inch square on top of the frames, or use a Hill's device so as to make a passage over the frame tops, and on this put burlap or other porous covering, then the straw or chaff on this with corrugated or other iron roofing over all laid directly on the chaff. So arranged, the sun will warm that body of chaff on top, and not only keep it dry but will go far toward keeping the colony warm, too.

I know of but one objection to this, and that is the danger of mice nesting in that warm place above and cutting the quilts. This could be avoided by using a piece of wire-cloth to cover the hive top, or by using a super or rim to hold the chaff, and the use of flat-iron on this. The sun shining on the hive front will warm it and the whole front interior, and the bees will cluster against that front and get many a limbering up from day to day. In this country the colony almost invariably clusters and starts breeding toward spring on the sunny side, and as they prefer to have the nest near the entrance this makes all favorable. Where hives sit with the side to the sun, the nest will form at the side, and if the back is sunward they will nest at the back. I know of no better way to winter in this country; and when so packed, and in a sunny nook, if the colony goes into winter in normal condition there will rarely be loss. In case of too much heat, and too much activity, a shade-board leaned up in front would prevent that; and when extremely cold it could be removed to let in the sunshine.

Loveland, Colo.

(Continued next month.)

Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

Some Timely Rains.

The day before Thanksgiving was a generous one for the agricultural class, especially in the greater portion of this State, as a glorious rain that just soaked the earth came almost unexpectedly. It lasted nearly all day, and the parched earth is now ready to be put in condition for all early crops. To the bee-keeper it will be a blessing, as it will start the early flowers that the bees may forage through the winter.

The Plague of Bee-Moths.

Perhaps I have mentioned it before, but if I have, it will bear repeating, for amateur bee-keepers can not be too much on their guard against the evil. It is the pest of the moth—the big fellows and the little wee ones. They are an enemy that work to your injury while you sleep; they may be worse than a mortgage in getting away with your well-earned labor.

The big or common wax-moth—Galleria mellonella— is well known to bee-keepers everywhere; it is very destructive and will soon ruin the comb of any weak colony it may get a foothold in; it will leave a hive full of good comb that is not protected by bees or otherwise—nothing but a mass of webs and excrements in a short time if not discovered in time by the apiarist and destroyed.

We have another wax-moth that at first I thought was the wee-moth described by Prof. Cook in his "Bee-Keeper's Guide." The Professor says that this small moth feeds on the pollen, and weaves a web over the comb. Some years ago I found a moth answering this description but recently I found a moth of the same or nearly like size depredating on exposed comb. They never had a chance to do much harm in my apiary, so little attention was paid to them. Being busy with other affairs, I set a lot of old comb aside for rendering into wax (all the clear comb was rendered early in the season with the cappings) in the winter. This comb was placed in fairly tight boxes and ordinarily it might be considered moth-proof. But I was surprised to find that some of the small moths had gotten in and did fully as much damage as I ever knew the first-mentioned to do. I should have put this old comb in the sun-extractor; then there would have been no valuable wax to be destroyed.

The sun-extractor is one of the best things a bee-keeper has in the apiary; all pieces of comb should be melted and not allowed to accumulate. There is no need of waiting for a wet or dull day to render wax and circumvent robber-bees when you have a wax-extractor. But I was going to remark that these small moths that did the damage just referred to, do not answer the description given by Prof. Cook in his valuable work, though it is much smaller than the common wax-moth, and depredated on wax, etc., as badly as the latter. If it were the wee-moth it would have confined itself almost wholly to pollen.

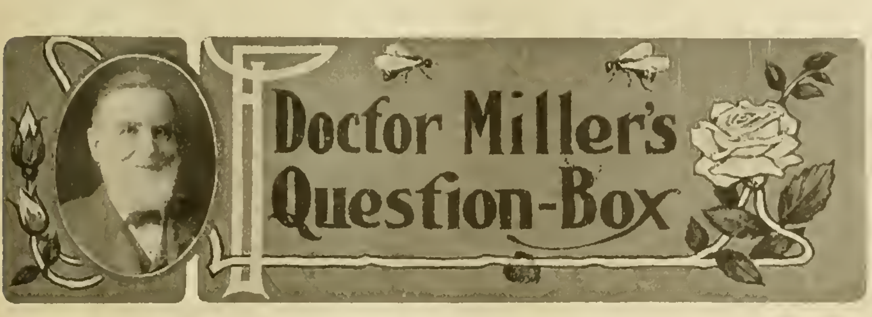
I have turned some specimens over to entomologists for further identification; I hope to give their report later.

Leaky Hive-Covers.

There is nothing so bad for the bees as a leaky cover. One of the sides of a hive could be better dispensed with in our climate than to have water coming upon the bees from above. I have seen old hives with a part or all of one side gone, which seemed to house a colony of bees comfortably, at least where the opening was not to the south so that the prevailing winter's rain could be blown in upon the inmates. But where rain keeps dripping in upon the bees from above, the colony is made uncomfortable, if not famished, and, besides, the combs are destroyed by the moisture.

Where a hive-cover cannot be made water-tight, it is an easy matter to place a temporary roof over the hive that will shed water. Years ago I had a lot of roofs made of light boards made from discarded fruit-boxes (and one can get all he wants from the fruit-stores for the asking). They were made in the first instance for shade against the hot sun of summer, but when winter came

I decided to use them on the hives, as I never liked the interior of the hives to get wet. Of recent years I have been using "patent" roofing and like it very much for making hives rain-tight. It is cheap, especially if you can be so fortunate as to get a lot of condemned stuff at the factory. The factories would sooner burn it than let you have it, still, I have known them to be generous enough to sell it for less than half price, and for hive-covers it is fully as good as the perfected material. Try it, if you can.



Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Length of the T-Super.

Isn't a T-super too short to cover the top of a hive? What do you do about it?

Answer.—Nail on one end a cleat ⅞ x ½ inch and as long as the outside width of the super. I prefer to have it tacked on rather loosely, for some of the time I prefer to have a space left at the back end of the super for ventilation.

Bees Leaving Hives in Cellar—Brood Foundation in Hives for Swarms.

1. I put my bees into a cellar for wintering. I have had trouble with one colony. The bees seem to want to get out. I have a screen frame over the front. No matter what time of the day I go near the hive, they keep out constantly, crawling on the screen. Are they affected with some disease?

2. Last spring I had trouble with the same colony. At the time I hived them the swarm was a large one. After 2 weeks' time I put 2 supers on, but they did not fill either during the honey-flow. What do you suppose was the reason?

3. Is it always necessary to put brood-foundation in the frames when hiving a swarm?
Wisconsin.

Answers.—1. Some bees are more excitable than others. It may be that they are fairly quiet when you do not go near them with a light. The only disease likely to make them uneasy is diarrhea, and it is too early for that to trouble much yet. Likely that screen does more harm than good. If a bee tries to get out and is hindered by the screen, it sets up a racket that makes the others uneasy.

2. Likely the flow did not continue long enough after they had the brood-chamber filled. Their first care is to fill the brood-chamber, and super work comes in *after* that. At the end of 2 weeks there may have still been room in the brood-chamber, or the flow may have then stopped. If other colonies were storing in supers after this colony had its brood-chamber filled, I don't know what the trouble was.

3. The bees will build combs without any foundation at all, but they will probably build them so crooked that you might as well have a box-hive. They will build combs straight if you have foundation only an inch deep, but in that case they have altogether too much drone-comb. It is economy to fill the frames with foundation.

Miller T-Super—Directions for Making.

As I am looking for the best super, I thought possibly you would sell me a T-super or two, as you have them arranged, which might be a great help in getting others right. I have had a few bees for many years, and feel sure there must be something better than a section-holder.
Pennsylvania.

Answer.—You are wise to want a model to pattern after in making any kind of bee-fixture. Yet a T-super is so exceedingly simple that a pattern is hardly necessary. I could spare you a super, but you ought to be able to get one from a supply dealer near home, saving heavy cost for transportation. Perhaps after I tell you how mine are made you will not care for a pattern. A T-super is a plain box without top or bottom, and for an 8-frame hive is 17⅜ x 12⅛ x 4½ inches, inside measure. That's for the usual 4¼ x 4¼ section. Of course, the depth must be different for sections of different height. If there is to to be any shrinkage of the wood, the depth must be more to allow for it. To support the sections at each end, a strip of tin ⅝ inch wide is nailed on. To support the T-tins, pieces of sheet-iron 1⅛ x 1 inch are nailed on; one in the middle, and one half-way between the middle and the end. Each piece is nailed on the long way across the super, the one end projecting ¼ inch or more into the super. A later plan, which is perhaps better, is to use a staple, an inch wide, driving it into the bottom ¼ inch or so from the edge, and then bending it over so as to be flat with the bottom of the super. The staple is driven in deep enough so that when done there will be a support of ¼ inch or more for the T-tin.

Uniting Purchased Bees with Nuclei.

If you had some nuclei you wished to strengthen by giving a pound or two of bees purchased from some other bee-keeper, what precautions would you use in uniting the purchased bees to the nuclei?
Iowa.

Answer.—Might do one of several ways. One way is to sprinkle all with flour. Or, sprinkle thoroughly with sweetened water. Or, shake them up in a dishpan till they don't know "where they were at." Or, put the added bees in an upper story for a few days, separated from the lower story by wire-cloth.

Tar-Paper Wrapping for Outdoor Colonies—Feeding for Winter and Spring.

1. I have 46 colonies of bees outdoors on the summer stands, in 8-frame hives. They are sheltered on the west, north, and north-west, by buildings. Will that keep them warm enough without wrapping them with tar-paper?

2. I fed my bees for 20 days, commencing October 1—each colony one quart of syrup, half sugar and half water. Is that sufficient for winter?

3. I looked through the colnies some days ago, and they had some frames pretty well filled with capped brood. Will that brood do any good?

4. I want to feed in the spring. What time is best to commence feeding, and how long shall I feed?

5. The thermometer hardly ever gets below zero here. I don't like cellar-wintering.
Kentucky.

Answers.—1. In Kentucky there ought to be no trouble about their being warm enough without tarred paper, situated as you describe.

2. The probability is that they have abundance, for likely they had quite a bit of honey before you fed.

3. Yes, that brood will probably hatch out all right.

4. Don't begin till bees are flying freely, and hardly then if they don't need it. If they have proper pasturage no need to feed longer than enough to give them plenty to last till the harvest, and leave no empty room in the brood-chamber when the harvest begins. It is not likely that in your locality there will be dearth enough any time before the harvest to stop brood-rearing, but if there does come a time when for a week or more the bees can gather nothing, then it will be well to feed daily or every other day.

5. As far south as you are, cellar-wintering is hardly advisable.

Late Drone-Rearing.

I find that one of my colonies is still rearing drones. The queen looks all right. She has been one of the best among 65. She is supposed to be young, as she came through the mail in May, and I started her with a small bunch of bees, and she built up a strong colony. I never noticed any drones until lately.
Utah.

Answer.—The queen may be all right, and she may be all wrong. It sometimes happens that a colony takes a notion to cherish some drones after drones are generally killed off, keeping them through the winter, while the queen is all right, but the fear is that your queen has become a drone-layer, even if she is not old. You can probably tell by the sealed brood next spring, or even now if there is any sealed brood present. If you find cappings of worker-cells flat, that's all right. If they are raised and rounded, like so many little marbles, the queen is a drone-layer, and should be killed. To be sure, there has been known such a thing as a queen getting over being a drone-layer, as W. M. Whitney has reported, but you better not count on that.

Best Hive to Begin With, Etc.

1. I am going to start bee-keeping in the spring and would like to know what is the best kind of hive to get, etc., and whether an 8 or a 10 frame hive would be the best.

2. I also wish to ask if you receive visitors at your apiary.
Illinois.

Answers.—1. If you are going to work for extracted honey, have nothing less than a 10-frame dovetailed hive. If for comb honey the same thing, unless you expect to give very closest attention to your bees, for an 8-frame hive requires closer attention to avoid starvation, and besides, for best results, an 8-frame hive must sometimes be run 2-story in order to give the queen enough room before the harvest. I run for comb honey altogether and use 8-frame dovetailed hives, but if I were starting afresh I would do some little studying as to whether I'd use 8 or 10 frames.

2. While visitors occasionally come, and are welcome to see what is going on, I'm afraid the visit is usually a disappointment, for generally we are so crowded that it is impossible to pay that degree of courtesy that might otherwise be desirable.

Uniting Strong Colonies.

1. Last fall I had more colonies of bees than I cared to winter, and not being able to sell any, I united them. They seemed well supplied with honey and bees, so that uniting made them very strong in bees. Is there danger of their starving before spring?

2. Was it right to unite them when they were all so strong? Bee-books say nothing about uniting any but the weak ones. When is the best time to proceed in such cases, and how should I proceed?
Illinois.

Answers.—1. As a rule, two colonies united will use less stores in winter than if left separate. So if they were sufficiently supplied with stores to winter separately, and you united stores as well as bees, there ought to be no trouble. But if you merely added to a colony the bees of another colony, leaving only the stores of the one colony, there might be trouble.

2. If 2 colonies are each very strong, it may not be advisable to unite them. Generally, however, even in an apiary of what might be called strong colonies, more or less of the number are not so strong as the others, and if one wishes to reduce the number of colonies it might be well to unite. A good time to unite is about the close of

the gathering season. If you want to double up so to have only half as many colonies to winter, set one colony over the other, with one or two thicknesses of newspaper between them, and punch through a single hole with a lead pencil, although there is hardly any need of such a hole. The bees will gnaw out the paper, and a week later you may reduce to a single story, although if strong enough both stories may be left. If, however, you do not wish to double up so severely, say making 2 colonies out of 3, 4 out of 5, or any other number, just take the frames from the colony to be broken up and put them around in the colonies to be strengthened, of course taking away enough frames to make room.

Moving Bees and Marking Location.

1. Do you agree with what Danzenbaker says on page 46 in "Facts About Bees," in regard to moving bees? He says that a colony of bees can be moved any distance in warm weather and faced in any direction, if they are well shaken up after sunset, when all are in the hive, to cause them to fill with honey, and by putting a bush in front of the hive for them to bump against for a few days, they will all mark the new location.

2. What is your opinion in regard to W. M. Whitney's statement, page 564 (1907), last paragraph of first column? He says that any normal colony of bees kept in its hive by bad weather, or from any other cause, for a period of 2 or 3 days, will mark its location anew on the first opportunity for flight. According to that they would not return to the old location if moved a short distance to a new one, after 3 days' confinement.

3. Can your plan of placing an old colony which has just swarmed on the stand of some other colony, and moving that colony to a new location, be carried out under the following conditions with good results? When a colony swarms, hive the swarm on the old stand, and move the old colony to the stand occupied by the hive holding 2 separate colonies, thus getting the field-bees of both colonies to strengthen the colony which has just swarmed. Would there be any disagreement between the 3 different sets of bees?

MAINE.

ANSWERS.—1. The plan is good. It might help matters to shut in the bees before they fly the next morning, pound on the hive till the bees are well stirred up, then open the hive. A late writer reports success—I think in the Review—by moving the bees to the new place, and taking out frame after frame and shaking all bees down in front of the hive.

2. Yes, I've often seen bees marking their location after being weather-bound for a few days. Also, I've often made bees stay where put, when forming nuclei, by keeping them imprisoned 3 days on the new location. But if you're going to do that with a full colony, you must look out for smothering.

Wrapping Hives for Wintering—Feeding for Winter—Rearing Queens—Spider-Plant.

1. I have 56 colonies of bees in my back yard, surrounded by buildings on the north and west, and on the northeast and southwest the sun shines on them from 9 a. m. till 3 p. m. I use dovetail hives. Will it be necessary for me to wrap the hives with paper for winter protection. I have supers on filled with chaff.

2. I have some weak colonies, and I got some honey-boards or queen-excluders, and put the weak ones over the strong ones, bored a half-inch hole in the hive of the weak colony just above the excluder so the bees could come out. Is that right?

3. The first of October I found my bees scarce of stores for the winter. I bought 500 pounds of granulated sugar, 20 Alexander feeders, and 10 Miller feeders, and put them on. I fed each colony a quart of syrup, half sugar and half water, every 24 hours, for 25 days. I lost some of the weak colonies. They had gone too long. I ought to have commenced feeding September 1st, and I would have saved all of them.

4. I am a subscriber of two bee-papers, and have "A B C of Bee Culture," and an outfit for rearing queens. I have read the papers and book, and can't see clearly how to rear queens. Is there any other book which would be better for a beginner? I want to rear my own queens next season. I commenced working with the bees in April, 1907. I have $300 in bees and bee-fixtures, and we had the worst drouth the past season that I ever saw. We had some rain July 8, and then had no rain till November 20. The alfalfa, buckwheat, sweet clover, and everything else burned up.

5. I see advertised, spider weed for bees. Will it pay to buy seed and sow for the bees?

I am a retired farmer, 64 years old.

KENTUCKY.

ANSWERS.—1. As far south as Kentucky, surrounded by buildings and with the supers filled with chaff, there is no need to wrap the hives for further protection.

2. I don't know. If left long enough in that way the two may unite. Still, that would be no great loss. There is also the objection that the lower colony is made somewhat colder.

3. So late as October it might have been as well to have fed syrup and to have fed faster.

4. Perhaps my book, "Forty Years Among the Bees," would suit you. It tells just how I rear queens for my own use as a honey-producer, and you can get it by sending $1.00 to the office of the American Bee Journal.

5. It is doubtful that it pays to buy any seed to sow for bees, unless it be to scatter in waste places, or to sow something that has value as forage aside from its nectar.

Wintering Bees in Wisconsin Hive.

July 4, 1908, I hived 2 small swarms of bees, and, to my surprise, the third day they united, and worked together without any trouble, and it is now a very large colony.

I have the Wisconsin hive. Can I use the body with inner cover and outside cover for wintering without the danger of bees dying? I secured 300 pounds of comb honey from 5 colonies. The best colony gathered 108 pounds. It was an old colony from 1907.

ILLINOIS.

ANSWER.—Depends somewhat on where you winter your bees. In the cellar they will be all right; outdoors they will need some extra protection. If nothing more, pile a lot of corn-stalks about the hives, leaving the entrances uncovered. Your better way, though, will be to put them into cellar.

How Many Colonies in an Apiary?—Might Try Prohibition.

1. How many colonies can I keep in my apiary? Within a mile are large fields of clover—three different kinds—a few thousand basswood trees, some cucumbers, about 5 acres of buckwheat, large fruit orchards, and other nectar-plants.

2. Which ticket is best for bee-keepers—Republican or Democratic? OHIO.

ANSWERS.—1. I don't believe there's a man living who can tell you. Possibly somewhere from 80 to 120.

2. Each of the two parties named seems to advocate about the same thing, so I don't know which would be better for the bee-keeper. Might try the Prohibition ticket, in the hope that some of the money now spent for liquor might be spent for honey.

Broodless Bees—Dividing Instead of Swarming—Caucasian Bees—Clipping the Queen—Winter Feeding of Bees.

I have 2 colonies of bees, and on taking out the frames about 10 days ago, was surprised to find no brood whatever, although each hive is heavy with honey, plenty of bees, and a fine queen. Why have they no brood? Is there not always *at least same* brood all the year round?

2. I would like to increase to 4 or 5 colonies next spring, but I am afraid they will swarm when perhaps I will be unable to be on hand. Would you advise me to practice artificial swarming; i. e., take out 2 or 3 combs from each hive with the old queen, or let them swarm in the natural way? Will such colonies build up strong enough the first year to store any surplus?

3. What do you think of the Caucasian race of bees? Would you advise introducing a Caucasian queen into a colony of Italians? Do you think it would make them more gentle, as I have one colony of extremely cross bees?

4. How do you clip a queen's wings? Is it good policy to do so?

5. Do you think it advisable to feed occasionally throughout the winter, say a pint of thick syrup once a week? Of course this can be done only on mild days. Or is spring feeding preferable? OHIO.

ANSWERS.—1. No; brood-rearing ceases entirely in the fall, not beginning again till about the time bees are taken out of cellar in spring. But bees wintered outdoors begin earlier.

2. If you let the bees swarm naturally, there will be great danger that you may lose swarms if not on hand to watch them if the queens have whole wings. Clipping will help. Your plan of artificial swarming will also work. Whether the new colonies formed shall prove strong enough to store surplus depends upon how you manage, and also on the season. If you take 2 or 3 combs with bees and queen, putting them on a new stand, you will not be likely to get much surplus. But if you leave the 2 combs on the old stand with the queen, you may count on their storing well if there is anything to store.

3. The real character of Caucasians is as yet an unsettled matter. Your safe way will be to stick to Italians. Of course, a queen of gentler Italian blood should be given to the cross colony.

4. Probably the majority think it is good policy to clip. Certainly it ought to be a good thing for you, seeing you are not constantly able to watch your bees during swarming. Mr. Doolittle catches a queen by one wing, lets her hold to the comb with her feet, and with a very sharp knife cuts the wing against thumb or finger. Probably a larger number, myself in the number, use a pair of scissors, holding the queen by the thorax (not by the abdomen or hinder part) between the thumb and finger of the left hand, and cutting off most of the 2 wings on one side.

5. Unless there is danger of starvation, better not feed in winter at all.

Transferring Bees—Instruction for Small Apiarist.

1. Can bees be transferred from an old box early in the spring, say March, by taking the bottom off and setting it on top of a regular hive? Would the bees move down and take possession of the hive?

2. Are there any books on bees that will give detailed instructions how to manage 4 or 5 colonies to the best advantage, with the least amount of work, for extracted honey? how to keep them from swarming, etc.? I want about 175 to 225 pounds of extracted honey annually for my own use. I have "A B C of Bee Culture," but I do not find what I want. KANSAS.

ANSWERS.—1. The suggested plan will work if the season is good enough so that the whole of the upper hive is filled with honey, for in that case the colony would be crowded down into the lower story. You can make it more certain by diminishing the size of the upper hive, cutting off the hive so as to cut away all the lower part that is unoccupied by the bees, including all unoccupied comb.

2. You will probably find no book that confines itself to the items you mention, although from any of them you ought to be able to glean what you want, and this department is always open to help out on any particular point if you do not find it fully answered in the books.

Feeding Bees in the Cellar.

The past was my first season with bees, and as bee-keepers around here never make a practice of requeening, I suppose my stock was not what it ought to be. Last spring I put out 4 colonies. They started to swarm and kept on swarming all summer. I had at one time 13 swarms, but was not getting any honey. Some swarms that were in good shape would not go up into the super. I was trying to get comb honey. Some did go up, and then the queen would go up and lay eggs in the sections. But I am all fixed up for the next spring. I bought all new queens, and had the wings clipped so that when they swarm again I guess I will be ready for them. But the result was I put in the cellar 8 colonies in all kinds of shapes, some that I don't expect to pull through, but if they live till in March, how will I proceed to feed them in the cellar, as I am going to save them if I can. My cellar is A No. 1, and I have no trouble to keep at right temperature—45 degrees.

MINNESOTA.

ANSWER.—If you promise never again to

put off feeding till bees go into cellar, I'll tell you what to do now. Carefully open a hive in the cellar, take out one or more of the empty combs, and replace with sealed combs of honey. But like enough you haven't such combs. Well, feed candy. Make cakes of candy as described in your bee-book, indeed almost any kind of candy that you can make from granulated sugar, only so it isn't bars, and then cover up. A still better way, if you have bottom-boards 2 inches deep and a colony is strong enough to have the bees hanging below the bottom-bars, is to put the candy under the frame. You can also fill a comb with syrup and put it over the top-bars or under bottom-bars, or hang it in the hive.

Moving Bees a Short Distance.

I shall move my bees about 100 yards this winter, and while I know what the bee books and journals say about it, I would take it as a personal favor if you would kindly tell how you would manage in moving them.

South Carolina.

Answer.—Although you do not say so, I suppose you have in mind the question of moving so as to have the least possible loss from bees returning to the old location. If I wanted to move my bees 100 yards, I should wait till winter was nearly over, moving them, as nearly as I could guess, just after they had had their longest imprisonment during the winter, and I would have little fear that any considerable number would return to the old place. The same thing might not work so well with you, as in South Carolina I should expect shorter periods of confinement and more frequent opportunities for flight. I should still work on the same general principle, adding some precaution. Clear up things at the old place, so that if any bee should try to return it would find nothing to look like home. Move the bees in the evening, when all are at home, and fasten them in so none can fly out, but not so as to smother them. Next day, or the first day it is warm enough for them to fly, pound on the hives so as to stir them up thoroughly and set them to roaring. Keep them in suspense for some time, leaving them thus till perhaps noon if you think there is no danger of smothering, then let them out, and you can expect them to mark their location.

Feeding Bees in Winter.

I would like to know how to take care of bees in the winter when they have nothing to live on. I have been raising the lid and setting a saucer of brown sugar syrup in for them, but in the December number I notice that some one thinks the lid should not be disturbed, as it is sealed by the bees and should remain as they have it. It seems that the bees will not come on the outside in cold weather enough to get syrup sufficient to keep them alive, and I am very anxious to keep them through until they can live.

Kansas.

Answer.—Use granulated sugar, not brown, to feed bees. You might get the bees to take syrup if you would move them into the cellar, although September is a better time to feed syrup. You can put into the hive combs of sealed honey if you can get them, or lay over the top-bars cakes of section honey that you can buy at the groceries. You can also lay cakes of candy over the top-bars. Your bee-book will tell you how to make the candy, although almost any woman knows how to make it. You might, also, make special bee-candy. Take a little extracted honey, or melt some comb honey, warm it, and mix it into pulverized (not granulated) sugar. Add all the sugar it will stand, so as to make a very stiff dough. Then lay a cake of this an inch or so thick over the frames and cover up close.

Shipping Comb Honey—Comb Honey Super as a Queen-Excluder.

1. I write for a little information in regard to shipping honey to Chicago, or other large cities. Is it necessary to enclose the shipping cases in extra strong boxes, or will they stand the rough handling without extra casing?

2. Who is a good commission man, and what are his fees?

3. Do you think honey will bring as much in January or February as it does now?

4. In producing extracted honey, will it be all right to leave a super of sections between the brood-chamber and the extracting super, as a queen-excluder? Or would it be necessary to put on an excluder? Illinois.

Answers.—1. If section honey is sent in shipping-cases without any outside protection there is danger that it may not go safely. No need to put the cases in heavy boxes that are close. Crates, or carriers, as they are called, should be used, which are more or less open, only close enough so they will hold the cases, the object being not so much to cover the cases as to prevent rough handling. If cases are shipped without being in carriers, railroad hands are likely to throw them as so many bricks, putting them in the car in any sort of position. Years ago I shipped some cases loose in a car, to go a pretty long distance, and when they were transferred to another car some of the cases were on their sides, and of course badly smashed sections of honey was the result. A carrier is generally made to contain eight 24-section cases, or sixteen 12-section cases, and provided with handles. Being so heavy they are necessarily handled with less roughness than would be the loose cases. Load in car so sections run parallel with the rails.

2. So far as I know, you are safe to ship to any you will find named in the honey column or advertisements of this paper.

3. No man can tell. Likely there will not be much difference.

4. The section-super might act more or less as an excluder, but the total result would perhaps not be satisfactory. If you want to produce extracted honey without the use of excluders, there are two things you might try. One is to have large brood-chambers and shallow extracting-combs, and the other is to add your empty combs always on top.

Early Spring Feeding—Sugar-Cane for Honey—Selling Bees—Extra-Thin Foundation.

1. What is the best way to feed in early spring?

2. Do bees get any honey from sugar-cane?

3. When is the best time to sell bees, to get the highest prices?

4. Is extra-thin foundation best for supers?

5. Which is the best to use in the frames, full sheets or starters?

6. How much is a colony of bees worth in a grocery-box? A Subscriber.

Answers.—1. Give them combs of sealed honey.

2. I don't know whether they get anything else from it except the juice of the bruised cane.

3. In the spring.

4. Some prefer it, but some prefer the thin because bees are inclined to gnaw out the extra thin.

5. Full sheets. If you use only starters you will have entirely too much drone-comb.

6. The price varies. Generally speaking, perhaps it is worth 2 or 3 dollars less than it would be in a good hive.

Wintering Bees in a Barn-Cellar—Feeding Bees to Hasten Increase, Etc.

1. We have a small room in our barn, back of the stable—I might call it a "barn cellar." I took the temperature of it yesterday, and the thermometer quoted 46 and 48 degrees above zero. How would that do to winter bees?

2. Can I hasten the rearing of bees by placing them in a cellar and feeding granulated sugar water?

3. How will "Franklin's" granulated sugar do to feed bees?

4. How can I winter our bees the best, and cheapest?

5. Will they eat more, or less, if they can move freely in the hive?

6. In cellar-wintering, must it be dark in the cellar?

7. What preventive have you for dampness in the hive?

We have 19 colonies of bees at present.

Pennsylvania.

Answers.—1. That's just the right temperature.

2. Hardly. You couldn't do anything worse than to get bees to rearing brood in winter, and when taken out in spring they'll start all right of their own accord.

3. I don't know as to that particular brand, but any pure granulated sugar is all right.

4. In your locality almost certainly in the cellar.

5. I don't know what you mean, for certainly there should be no restriction put upon bees to prevent their moving in the hive. Possibly you mean their being warm enough to make them move about in the hive. That would make them eat more.

6. Yes, unless the bees will keep perfectly quiet in the light. When first put in the cellar they don't seem to mind the light much, but a great deal toward spring.

7. No special prevention is necessary. Only the cellar should not be damp, and the entrance to the hive as large as possible. Each of my hives in the cellar has an entrance 2 x 12 inches, but not many hives are made to allow that.

"Old Boy" Bee-Keeper—Dividing vs. Natural Swarming.

I am an "old boy" like yourself, born in 1833, and a "Sucker," raised in Stark Co., Ill. I landed off a steamboat above Peoria, in 1836. I started to school in the first log school-house built in the county. So I have only a log school-house education. I am an old soldier, and the son of an old soldier. I am rather new in the bee-business. I have handled some bees in box-hives, and my father had some bees in log-gums. But too old to learn, I want to do something to keep me out of mischief, and I come to you for help. I have "Forty Years Among the Bees" and the American Bee Journal. Does dividing bees give satisfaction as well as natural swarming? And will it do to get some queens and put in the new colony and divide them when I get the queens, whether they are ready or not? Missouri.

Answer.—Whether natural or artificial increase is better depends upon how the artificial increase is made. The beginner, finding it so easy to increase artificially is apt to overdo the matter. He starts a big lot of new colonies, which go into winter quarters so weak that most of them die before spring. Natural swarming is better than that. If good judgment is used, making the new colonies strong, or at least starting them in time to have them strong before the close of the season, better results can be had with artificial increase.

It is not necessary to make any preparation before the arrival of a new queen. If, for instance, as soon as the queen arrives, you put on a new stand 3 or more frames of brood with adhering bees (which may all be taken from one colony, and still better if taken from 2 or more different colonies), and give the caged queen to this newly formed colony, you ought to have the best kind of success.

Moving Bees—Getting Increase—Introducing Queens.

I must move my apiary of 10 colonies nearly 200 feet across the pike, to a new location, and knowing the disposition of bees to go back to their old location, I thought you could give me some plan, and suggest the best time to do it. I don't want to take them away from home over these hills and rocky roads, and then have no safe place to leave them, and later return them. I shall avoid the above plan if there is any other safe way to follow. Could I set one or 2 hives with comb and honey near the center of each row of hives, to catch the bees that go back? Would they stay in these hives, and if I would have a new queen to give them, could I make increase that way, and save the bees? Would the loss of these bees from the parent colonies ruin them? Now, if this would work, why couldn't increase be made in that way by moving a strong colony, setting a prepared hive in its place, and give the new colony a good queen? I speak of this because I failed to get 6 purchased queens introduced this season. I lost every one, and one colony besides. After finding that they killed the queen I gave them brood and eggs from other colonies to try to save them, but they would not start queen-cells, and dwindled down to about a pint of bees, and died with plenty of honey in the hive. I would like to know some certain plan to introduce a queen. West Virginia.

Answer.—If you leave your bees where they are until winter is over, and then move them before they fly out in the spring, there will be very few bees return to the old place. What few do go back will finally settle in the new place if you take away all stands and make the old place look as different as possible. You can add to the security by setting up a board in front of each hive, so they will bump their heads against it when they first fly.

Yes, you could work the plan you mention, putting a hive with empty combs to receive the returning bees. A queen could be added, only she should be caged, or the bees might take a notion to kill her. This plan has been used in making artificial swarms, only the old queen is generally put in the empty hive on the old stand, and new queen given to the removed part.

I know of only one entirely safe plan to introduce a queen. Put into a hive-body 3 or more combs of sealed brood—not a single bee with the brood—put the queen in, fasten so no bee can get out or in, and in 5 days set the hive on its stand, and give an opening large enough for a single bee to pass. During that 5 days the hive must be kept in a warm place, or else over a strong colony with 2 sheets of wirecloth under, so that the heat can rise but no bee below communicate with any bee above. Of course the ripe brood will be hatching out all the time, and in 5 days there ought to be quite a colony, especially if you have 5 or 6 brood. You will not find the frames of brood ready to your hand, without any unsealed brood, so must get them ready. Take the best combs you can find for your purpose, put them in a hive-body over a strong colony, and excluder between the 2 stories, and 9 days later all brood will be sealed ready for you.

Managing Late Swarms—Uniting Colonies.

I have looked with interest for the American Bee Journal each month, to see what questions you answer, as I am just starting in the bee-business and find answers to lots of questions that I would ask. But I am at a loss to know what to do with a late swarm that I had this year. Last year I purchased a swarm of bees that was put into a box-hive. After filling the lower part the bees filled a 10-pound box in the super, that I removed. They were wintered in the cellar. They swarmed twice this summer, and both swarms were put in box-hives that I made. The first swarm weighs 60 pounds; after taking off the super of 10 pounds, leaving 50 pounds of bees and honey. The old hive has 56 pounds of bees and honey. Will that be enough honey to winter them in the cellar? My cellar is dry and warm, as I have a furnace in it.

The second swarm is in bad shape, as it was not so large as the first swarm. It did not fill the comb with honey in the box-hive. Now they are about out of honey. Can I unite them with either of the other colonies, or feed them at this time of year? If so, how? NEW YORK.

ANSWERS.—Unless there is something about the box-hive to make the hive itself remarkably heavy in weight, 56 pounds ought to be abundant to carry the bees through all right.

As to the weaker colony nearly out of stores, turn the hive upside down in the cellar, and lay cakes of sugar candy over the combs. It will hurt nothing to leave the hive upside down all winter.

Swarming—Caucasian Bees—Wiring Comb Foundation—Queen-Excluders.

1. If there are queen-excluders on the hives when a swarm issues, the queen not being with the bees, will they return to the hive of their own accord?

2. Do the bees in this case settle or return to the hive without settling?

3. When should a new swarm be furnished with sections—as soon as hived or later?

4. How do you keep your bees from swarming?

5. Are there any indications to tell when the first swarm will issue?

6. Which are the most gentle—Italians or Caucasians? Also, which of these two are the best honey-producers?

7. How many times do you let a colony swarm when you are wanting them to store a surplus?

8. When a colony swarms and I wish to unite the cast off swarm to another weaker colony, how should I proceed? When I dump them at the entrance I have great trouble with them fighting.

9. When should the second super be given to a colony?

10. When full sheets of foundation are used in the brood-chamber, how do you insert the wire to hold it?

11. If a queen-excluder is left on a colony through the swarming season, and then removed, will the queen continue to lay, or during this time must she mate with the drones? MISSOURI.

ANSWERS.—1. Yes, generally, but occasionally a swarm may unite with another swarm.

2. Sometimes one way; sometimes the other.

3. Unless an excluder is used under the super (generally it is thought best not to use the excluder), don't give the super until the queen has begun laying well in the brood-chamber, say 2 or 3 days after hiving.

4. I don't always. Cutting out queen-cells will sometimes hold them. Sometimes I make them queenless and return the queen after 10 days. A practically certain way is to make the colony queenless for 10 days and then give a *young* laying queen.

5. Yes, when a colony decides to swarm it starts a number of queen-cells. About the time the first queen-cell is sealed the swarm issues.

6. Hard to answer on account of the varying character of the reports as to Caucasians. A good deal has been said about this in late numbers of this journal, by reading which you can judge as well as I. On the whole your safe plan is probably to choose Italians.

7. None at all, if I can help it.

8. Unite only those that have the same kind of queens. If one has a laying and the other a virgin queen, there is likely to be fighting. It will help to keep down fighting if you dump down in front of the hive both lots of bees, letting them run in together.

9. When the first is about half filled.

10. I don't insert wire; I use foundation splints. If you want to press wire in the foundation, you can get a tool specially made for that purpose. You can adapt a dressmaker's tracing-wheel to the same purpose.

11. That depends upon where the queen-excluder is. If between the hive and the super, it may stay on without harm. But if at the entrance, it must be out of the way when a virgin queen is in the hive.

A bee-book would be worth to you much more than its cost; and if you get one I'm sure you will thank me for advising it.

Getting Most Increase.

I have purchased 4 colonies of bees. I want all the increase I can possibly get. What is the best way to get it, as I know nothing about bees whatever? I have never seen a queen. My bees are in frame-hives. NEW YORK.

ANSWER.—If you go into big increase without knowing anything about bees, the probability is that a year from next spring you will not have as many colonies as you have now. I am speaking of artificial increase. Your safe way will be to let the bees swarm naturally. If, however, you want to increase more rapidly than that, you must begin by knowing something about bees, and must get a bee-book and study up this winter. For that one matter alone, the book ought to be worth to you several times its cost. After you've studied it pretty thoroughly, you'll probably not have very much trouble deciding how to make increase. If you do have any such trouble then, I'll be glad to help you out.

Winter Losses—Amount of Stores for Winter—Taking Bees Out of Cellar in Winter.

1. In Dr. Miller's "Forty Years Among the Bees," page 326, you say, in regard to wintering, that one starved, 2 died of queenlessness, 2 more robbed out, probably also queenless, or words to that effect. Was that your entire loss in wintering for 1904 and 1905? If so, I consider it remarkable, when compared with your losses of 1902-'03, 1903-'04, page 324. And do you consider the principal reason that you were successful on account of an abundance of stores?

2. With a furnace in a cellar and a mild winter on, the bees living in a temperature of 50 to 60 degrees, and sometimes going to 70, is a new one for most bee-keepers. Would 20 pounds of honey be a sufficient amount, or would 40 be safer? In these conditions do bees rear much brood? or not any?

3. Were the conditions about the same during last winter—1907-1908? And what was your loss then? And did that prove that the abundance of stores was the great safeguard in wintering bees in a cellar with a furnace? Of course, I understand that you provide ventilation and allow fresh air to enter, and to some extent to control the temperature.

4. There are furnaces going into homes continually, and if it happens to be a bee-keeper, especially one who cellar-winters, your advice, "look out for starvation" is timely. With ample stores then you feel that that style of wintering should prove reasonably successful, do you? That is, a temperature of from 50 to 60, sometimes 70, with probably an average of 55 most of the time, the room darkened, and at times the windows and door opened for fresh air.

5. What day and month was it when you took your bees out last spring (1908)? Also, what was the date when you placed them in the cellar this winter? WISCONSIN.

ANSWERS.—1. Yes, that was the entire loss, and the principal reason for the difference between that winter and the few preceding winters was th difference in stores, as the previous loss had been mainly from starvation. The cellar being kept open so much of the time probably had some bearing also.

2. Just as you put it, I'm afraid some will get the impression that my cellar is warmer than it really is. While 70° may have been reached, that's a thing that happens only once in a great while, and indeed 60° is not very common, while 50° or lower is perhaps the rule. Sometimes, indeed, the temperature goes below 45°, as when I've left the cellar door open at night and before morning there is a sharp fall in the outside temperature. I have an impression that the cellar will average cooler than the first few winters with furnace in cellar, owing to the cellar being kept more open. Wait a minute and I'll tell you just how it is this 11th day of December in the afternoon. * * * It's 29° outdoors and 49° in cellar, with one of the outside cellar-doors perhaps a third way open. The bees are about as quiet as you are likely to find them with 160 colonies in one room.

Now to your question. There's a big difference in the amount of stores needed by different colonies. While 20 pounds may be plenty for most colonies, occasionally one uses 30, and as it is impossible to know in advance which colony will be the big eater, the only safe way is to give all the amount needed by the exceptional consumers. If I knew each colony had 30 pounds of honey, I shouldn't lie awake worrying for fear of starvation. But I wouldn't like to limit them to 30, and some of mine have 40 or more. Not that it's all used in wintering, but it is better for them to have enough to carry them up to the harvest. Moreover, I have a notion that they winter a little better on full combs, even if they don't need so much honey. I don't think the warmer temperature in the cellar starts brood-rearing. Do you know that bees start at rearing brood outdoors earlier than they do in cellar?

3. Conditions were much the same, only the winter of 1907-1908 was unusually mild, and cellar-door more or less open nearly all the time. Winter loss was 7 out of 158, and I don't know how many of the 7 were queenless. Yes, lots to eat and lots to breathe is the great desideratum.

4. As before intimated, your figures are rather high, and at any time when the thermometer stood as high as 50° I should hardly want the cellar closed. An occasional run up to 60° or even 70° would not trouble me. With abundance of stores, air all the time pure, and darkness enough to keep the bees from leaving the hive, there ought to be no trouble with the thermometer ranging from 45° to 55° and an occasional excursion into the higher regions.

5. Bees were taken out of cellar March 23 and March 26, 1908. Put in cellar Nov. 27, 1908.

Reports and Experiences

Bountiful Honey Season.

The past season has been uncommonly bountiful in this locality. As a rule, we have to depend mainly upon the white clover for our surplus honey. Almost every year gives us a little late honey from buckwheat and fall flowers, but the yield is generally so scant, that very little surplus honey is secured from these sources. This year, however, the program was somewhat changed, the result being greatly in our favor.

After the white clover had yielded a fair crop, the prospect was not very encouraging for a week or two, but as soon as the buckwheat began to bloom, honey again made its appearance, and continued to do so with more or less liberality all through the rest of the season, until the frost cut vegetation late in October.

An unusual amount of buckwheat and amber honey was the result. We also had, as a consequence of the prosperous season, quite a number of buckwheat swarms, which hardly ever happens in this locality.

G. C. Greiner.

La Salle, N. Y., Dec. 26.

Bees Did Best Last Season.

My bees did better last season than any season yet. All honey gathered was from white clover, and sold for a good price. I have 30 colonies of bees, and run them all for comb honey. There is no sale for extracted honey here. It is a drug on the market.

Emmett Raisbeck.

Benton, Wis., Dec. 25.

Bees Did Fairly Well.

Bees did fairly well this season in this locality. Mine averaged 50 pounds per colony, all from white clover. I had 5 colonies, spring count, and increased to 11. And now they are wintering well in the cellar. I take good care of my bees.

I like the American Bee Journal and will never be without it as long as I keep bees. I think it is the best bee-paper in print.

Henry F. Pischer, Jr.

Granton, Wis., Dec. 21.

Quoting the Honey Market.

I notice a letter in the November number regarding the San Francisco comb honey market being quoted too high in the bee-papers. I don't know what the situation really is, but I believe it is quoted too high.

I was selling some comb honey in Elko (this State) about the first of the month, and spoke of the San Francisco price being 17 cents, and was surprised when a grocer showed me a circular of prices from a commission firm of Sacramento and Reno, giving a price of 13 cents for fancy comb honey to the trade. Still, as Gleanings says in the December 1st issue, this doesn't show the San Francisco prices too high, but Sacramento is only 90 miles from San Francisco, and it doesn't seem possible that such a difference in prices could exist for any length of time.

J. E. Patton.

Halleck. Nev., Dec. 19.

Getting On in the Bee-Business.

I started in the bee-business last spring with 2 colonies of bees in 8-frame hives of the improved Langstroth style, and I bought 5 2-story 10-frame hives last spring. One colony swarmed early in May, and absconded, but the next swarm that came out I caught and put into a 10-frame hive. This was the last Sunday in May. I paid a neighbor $2.00 to put 2 swarms into 2 of the 10-frame hives. Then on the last Sunday in June a swarm came and settled in a hive I had in a tree. I then transferred a colony from an old house to a 10-frame hive. This made 5 colonies in 10-frame hives and 2 in 8-frame hives.

The swarm I caught the last of June stored 55 pounds of comb honey. I got only 113 pounds all together, but I have 7 colonies packed in winter quarters, in good condition. I like to work with bees even if I do get stung a few times.

I bought a bee-book last spring, and took the American Bee Journal all the year.

Dale C. Cole.

Marshalltown, Iowa, Dec. 29.

A Big Honey-Yield—Other Matters.

Whew! 1144 pounds of extracted honey from one colony and its increase. Say, Mr. Vangundy, I wish you would give us your methods of management. If you sell it at 10 cents a pound you get $114.40 worth of honey from one colony. But, don't let that go too far, or you will have a bees'-nest (of bee-keepers) in your hair.

Mr. O. D. French makes all his supers into observation chambers, page 374. Well, it may do for you, Mr. French, but I think we big bugs will be contented with lifting up one end of the super and looking up between the sections. We want to remove the central sections as soon as filled, and could not very well do so without first tipping up one end of the super and looking from under.

For Mr. J. R. Bogart, I would suggest that he purchase a Swiss wax-extractor and cut off the cone in the center near the bottom, and solder a circular piece of tin over the opening left. Then solder in a honey-gate in place of the outlet spout, and there you have a device (capping-melter) to take care of the cappings.

In conclusion, I wish to say that I believe the best way to get the newspapers to stop publishing falsehoods about bees, honey, and temperance, is to help the editors to obtain and furnish truthful reading matter for their papers. Let us remember the words of the Apostle Paul, when he said, "Be not overcome of evil, but overcome evil with good."

Hampshire, Ill. Chas. M. Hix.

Almost Warm as Summer.

It is almost as warm here as summertime with the bees flying about, and they would be at work if there were anything to work on. That is a bad sign for bees here. They have done that way before and we look for trouble in the spring.

We all can do a little to help in the bee-keeping world, but I am having a poor chance now. My mother, who is 87, is down never to get well. Then I will be left all alone. She has told me she can not stay with me any longer to help me and that makes me feel very bad.

R. B. Peray.

Greenfield, Tenn., Dec. 30.

A Bad Year for Bees.

This has been a bad year for bees with us. I have lost 20 colonies out of 60, and I am afraid we will have another bad year. It has been dry and warm all winter. In fact, we have not had any winter as yet. At this writing the thermometer stands at 3 o'clock, p. m., 63 degrees, in the coolest part of the house, and we have had scarcely any rain for 3 months.

S. B. Singletary.

Cairo, Ga., Dec. 22.

Miller Tent-Escape and Young Bees.

Some one has been observing very carelessly,or else my bees are different from others, for all this last season I noticed that when, being crowded, I took a super to the house and cleaned it, by letting the bees fly away, that there were a large number of young bees which would not leave the supers, and when forced off would hang around the door of the kitchen all day and over night. Had they not been young they undoubtedly would have gone back to the parent hive. I can see no reason why young, and very young bees, should not go into the supers, and I know I have seen them there. In a device like the Miller tent-escape, if set up in the yard, the young bees, in flying about, no doubt would go to and into the nearest hive, but if taken to the honey-house or kitchen they will hang there.

I am just getting a good start in the bee-business, the past season being my third year, when I started with 8 colonies, mostly Caucasians. I got 7 swarms from my 8 and captured enough to make 31, and then 10 more which I had not hives for and left them in boxes. I took off over 1,200 pounds of honey, comb and extracted, and it was a very poor season, I am told by my neighbors.

(Dr.) A. F. Bonney.

Buck Grove, Iowa, Dec. 16.

An Uncapping Outfit.

I have just read J. R. Bogart's letter on pages 373 and 374, and as help is asked for in answering him, I will give a description of my uncapping outfit, with the hope that it may help Mr. B., and other small producers of extracted honey.

Take 2 galvanized-iron wash-tubs of such size that one will just slip down in the other about an inch. Cut out the bottom of the upper or larger tub, leaving about an inch of the bottom part attached to the sides, and to this solder a piece of wire cloth, so as to make a strainer of the upper tub. Run a piece of board 1x2 inches through the handles to form a rest for the comb when uncapping, then push this tub down into the other so as to make a snug fit, and you are ready to go to uncapping, and the honey will drain out into the lower tub. If the lower tub begins to get full of honey, set the upper tub containing the cappings over the extractor a moment while you empty the lower tub into the extractor.

Have a can made of galvanized iron of such size that it will hold about 6 gallons. Put in an ordinary molasses faucet near the bottom of this, stretch a cheese-cloth over the top of it, and set it under the gate of the extractor, and when full of honey, you can fill a 5-gallon can or quart jars from the faucet. Simple, isn't it? You can have this uncapping can out in the yard as long as you please. The bees will clean up the cappings in the upper can, but can not get to the honey in the tub below.

I can imagine some of our large producers smiling at such primitive methods, but for the man who wants something cheap, light, and efficient, I know of nothing better. After one tub of cappings drain over night, they may be put into a sack and laid away for future rendering into wax, while the bee-keeper begins a new day's work with an empty uncapping can, thus handling a crop of a good many thousand pounds.

Alice, Tex., Dec. 19. H. D. Murry.

An Uncapping Vat.

On page 373, Mr. J. R. Bogart, wants some advice as to an uncapping vat, can, etc., for a small apiary. Now I use 2 vats made out of 2x12, about 30 or 32 inches square, made to sit over each other tight, but not fastened together. The top one has a perforated galvanized-iron bottom, and the lower one has a tight galvanized-iron bottom nailed on flat, but double nailed, also a honey-gate; the whole to sit on legs about 10 inches high. Put a cover on the top vat, also a band of 1x4 inch stuff around the middle to lap down half-way (or 2 inches) onto the lower vat. Cut 2 grooves on opposite sides of the top vat, and put in 2 sticks ¾x¾ inches, parallel, and about 8 inches apart. You can uncap in this, and let the cappings remain in the top vat any length of time, if you don't have too many. Only a few days are required to drain them perfectly dry, when they can be removed or melted. Cover all wood and galvanized iron in each vat with a good coat of paraffine wax.

Leslie J. Schneider.

Greely, Iowa, Dec. 21.

Something on Queen-Rearing.

I see that Mr. Grant Anderson wants to have some one hang up his ignorance for us queen-breeders to shoot at. So I will hang up a few facts.

Can Mr. Anderson take a dozen white leghorn pullets and put a black rooster with them and breed pure white leghorn chickens? If so, then he can take black drones and breed pure Italian queens from his mongrel crow-black Italians. Mr. Anderson, is it not so that the egg that would bring forth a black worker, if changed to a queen, that queen will be black? an egg that will give a one-band worker, the queen will have one band also? You can not breed a 3-band queen from such queens as yourself and Mr. Doolittle describe on page 259 and 266 (1907). Just the description of your queens is all the truths you have in those letters.

You read on page 862 (1906) and see what the writer says. What is considered a pure Italian? That writer does not say if I am right or wrong. Yourself and Mr. Doolittle came out with a big statement. It is plain that either of you understand the laws of pure breeding. Do you think you can take a mongrel sire and a mongrel female and breed pure stock? This is what you get from Italy.

In the September, 1908, number, you say that you have had complaints that your queens do not give satisfaction. You tell those people that complain, that the queen was killed, and that the bees reared a young queen from her eggs. You are wrong. It can not be so. Mr. B sends $3 to Mr. A for one of his breeding queens. The queen arrives. Mr. B opens the hive and captures the old queen. As soon as those bees find their queen missing they start queen-cells. Mr. B has been instructed to liberate the new queen in 48 hours. I will admit that the new queen is received all right and that her worker progeny will take its first flight not sooner than 28 days. As you claim the old queen was killed, she never layed an egg in the brood-comb; therefore, the workers could not rear a young queen.

You see, Mr. A, that the bees had 48 hours the start with queen-cells before the new queen was at liberty to lay. Then she had to travel over the combs and get acquainted with the bees and see if there were any rival to contend with. This would take 1½ days. Then, after the first egg is laid, it takes 3 days to hatch. So they had 6½ days the start with old queen-cells before they could get a larva to start a cell from the new queen's larvæ. If the bees should start cells from the new queen's larvæ when the cells were 9 days old, the young queen in the old queen-cells would be hatching, so you see you are wrong.

On September 3, 1902, I freed 3 queens in hive No. 3. This colony never cast a swarm until June 10, 1907. Those 3 queens lived until the middle of May, 1904. Two of those queens, their workers, and drones, were yellow to the tip of abdomen. The third queen's drones were as yellow to the tip, but her workers had 3 yellow bands and yellow to the tip on the underside of the abdomen. Those 3 queens were superseded in May, 1904, and each young queen's drones were yellow. And every queen I have had from this breeder is just as well marked. There is not a better race of bees in America. They fulfill every claim this breeder claims for them. Those 3 queens lived from May, 1904 to May, 1908, and were stronger in bees than any other colony in my yard; and as for the 2 queens that cast prime swarms, the mother colony always filled its sections full.

SUBSCRIBER.

New York State.

Report for 1908.

I had 40 colonies of bees in the spring. I got over 500 pounds of comb honey, and an increase of 10 colonies, making 50 colonies. I just placed them in the cellar for the winter.

JOHN CLINE.

Darlington, Wis., Dec. 9.

A Honey-Strainer.

I herewith send a description of a honey-strainer that I made for my son, Morley, several years ago. It was made for straining honey into barrels just as it came from the extractor. It consists of a tin can about 16 inches in diameter, and 8 or 9 inches high, with an outlet about 2 inches in diameter, and about 2 inches long, placed in the center of the bottom. In this can is placed a wire cage or basket, made of strong wirecloth, which is about 15 inches in diameter, and one inch lower than the can. The meshes may be two or three to the inch. This basket is set in the tin can on blocks, legs, or any convenient thing to keep it about ½-inch from the bottom of the can. Now spread a piece of cheese-cloth over it all, and you have a strainer second to none. So I think. But may I say I never saw any other honey-strainer? There is no necessity for the basket to be as high as the can, for the cloth goes over all, and if the honey should get above the basket no harm will result.

Aylmer, Ont. S. T. PETTIT.

Experience with a T-Super.

In the November issue I noticed something about the T-super. Now, I would like to tell my experience with the T-super. I have kept bees successfully for several years, and one of my first supers was a T-super. Its most objectionable points were that the top and bottom of the sections were exposed, and the bees took advantage of this, and when I took the filled sections off the hives they were all bee-stained. Thus a lot of labor in the way of scraping and cleaning was necessary to put the sections in shape for market, but the writer in the American Bee Journal explains that Miss Wilson scrapes and sandpapers the sections while in the super.

Now, what do you think of such a lot of labor and loss of time, and the sandpaper dust, which is not wholesome, all over the comb honey? However, to say that this super has so many advantages, and the rapidity with which the sections can be handled, and with ease; and also boasting that it has no equal on the market—the T-super has not only equals, but many supers are far superior. I have given the T-super a test, and it proved to be a regular time-waster and an out-of-date super which produces the most unclean sections of any super I ever had in my bee-yard.

All I can say about the T-super is that it is a super for a bee-keeper who does not care to be up-to-date, and who has a lot of time to waste in a most unnecessary way, but this is far too slow for me. I will never allow such a time-killer as the T-super on any of my hives again, as I would consider it a great waste of time and labor, which is too valuable a thing to waste in the present century. Therefore we want a super that can be quickly filled and emptied, and at the same time keep the sections clean and square, so that they can be placed on the market in a most appetizing way, and with the least possible labor.

A. READER.

Guelph, Ont.

A Good Honey-Year.

This (1908) has been a good honey-year in this section. I started in the spring with 7 colonies, and increased to 13. From colonies 1, 2, and 4, I procured 100 pounds of comb and 300 pounds of extracted honey. My entire crop was 530 pounds of comb and extracted. There was no fall flow as usual, which, of course, made my crop smaller than I had expected. But I can not complain, as I think I have done very well for a beginner.

THOS. H. WHITE.

Connersville, Ind., Nov. 30.

Peculiar Season.

The honey crop here was short. I got 40 pounds of comb honey to the colony, from 14 colonies, spring count, and increased to 26 colonies, by nucleus method; no natural swarms. The honey harvest here was peculiar this season. There was nothing that could be called a honey-flow. Bees commenced gathering a little surplus about June 15, and continued till September 15. During this time there was scarcely a week that the strong colonies did not put up a few pounds of surplus. It required careful handling to obtain maximum results. I soon "caught on" that the best way to handle this slow harvest was to keep room enough in the supers, without too much; with plenty of encouragement in the way of "go-backs." The work was nearly all done in single supers. The result was there was not much extra fancy, but most of it goes all right on the local market. There was no more honey harvested in this locality than will supply the local trade till Christmas.

Cainsville, Mo., Nov. 30. J. FRENCH.

Selling Honey at Home.

The season of 1908 has passed. It was not a prosperous season so far as bee-keeping is concerned, as the whole surplus from 26 colonies amounting to only 900 pounds—less than half a crop. But all sold like hot-cakes, at 10 cents a pound—all extracted. In fact, I could not get it off the hives before my customers stood ready to grab it. I sell all my honey to private customers. I put it up in ½-gallon jars (Mason fruit-jars) and 60-pound cans nicely labeled, and it takes about 1¼ tons to fill that trade. The labels on all packages and boxes have given me more trade than I am able to supply. The price (10 cents a pound) is for the bare honey, right here in the apiary. The cost of jars and cans, is added, and the freight paid by the recipient.

The bees are now supplied with at least 30 pounds per colony for winter, and winter-cases put on. I have in all 30 colonies in good order. Last winter we did not have one whole week that bees could not fly. The thermometer did not get lower than 29 degrees, and that only in the early morning, and no snow at all, but rain, of course.

The American Bee Journal is keeping up its reputation as the "Old Reliable." I do like the old friends that I never saw—Dr. C. C. Miller, G. M. Doolittle, Professor Cook, and Miss Emma Wilson, and all the others who write for the American Bee Journal. They all seem as if I knew them as old friends.

O. K. RICE.

Wahkiakum Co., Wash., Nov. 25.

Women as Bee-Keepers.

I read with much interest articles appearing in Miss Wilson's department of the Journal, and especially so with those appearing in the November issue. Comments by Miss Wilson on Prof. Cook's reference in Gleanings, to poultry-keeping in connection with bee-keeping, is timely, and should interest bee-keeping women generally. It has been my observation that women, because of the greater care and attention they give to details in whatever they have in hand, are especially adapted to the occupation of bee-keeping, poultry-raising, cultivation of flowers and small fruits.

I have given instruction to many, who, at first, seemed timid, and who hesitated to approach a hive of bees, but soon got entirely over their fear; and the gentleness, dexterity and care with which the frames of bees were handled, was surprising to me. I really think that intelligent women, who may be situated favorably for a combination of bee-keeping with any, or all, of the occupations above mentioned, with a little help for the heavier work, ought to make a success of the business.

The statement by Miss Wheeler, of her perseverance under difficulties—those stings she uncomplaining bore—my! where is there a man who would have done that? It shows the right kind of spirit to make a bee-keeper, or to do anything else, where nerve and endurance are requisite to success.

The same thing is exemplified in the statement by Mr. Dayton respecting the work done by Mrs. Dayton—the taking off tons of honey, and the management of the bees—showing that gentleness and care are essential qualities in the proper management of bees.

That abundant success may attend the bee-keeping-sisters, and that more may be encouraged to engage in this most fascinating pursuit, is my wish.

WM. M. WHITNEY.

Evanston, Ill.

Encouraging Neighbors to Keep Bees.

I am one of the beginners (and may be a quitter soon) in the bee-business. Some things I read in the American Bee Journal do not seem altogether reasonable to me. Why bee-keepers should encourage their neighbors to keep bees, for example. I would prefer that nobody had bees closer to me than 2 miles, instead of close around me as they are. Why? I could then rear pure-bred bees, and sell more honey.

As to whether it pays to make one's own hives, depends upon circumstances, I think. If one has any skill with tools, and any spare time, he should make very good wages making his own hives. Empty bodies, bottoms and covers cost $1.00. The materials for the same cost not over 40 cents. I can make 5 hives a day, thus earning $3 a day. These will have gained corners and be nailed in two directions in each corner, thus making a hive that will stand the climate of the Middle West. I think one can better afford to buy all the inside furniture, however.

I should say to any one contemplating bee-keeping, to get a book on the subject first, and read the advertisements in the bee-papers too. It will save him money.

MISSOURI JIM.

Lemonville, Mo., Nov. 28.

[We don't know any one who encourages his neighbors to keep bees. Of course, if they have bees, or are bound to have them, why not try to get them to read the American Bee Journal regularly? It surely is better to have well-informed bee-keeping neighbors than ignorant ones.—EDITOR.]

Horsemint and Mesquite in Texas.

We are having some good rains which are bringing up the horsemint in good shape. Horsemint is one of the main honey-plants in this part of Texas. It stayed in bloom here last spring several weeks, and all strong colonies stored about 100 pounds of bulk honey from it. We get a crop of horsemint honey only about every 2 or 3 years.

This county is not favored with as many plants and honey-producing trees as some other counties. Mesquite yields more honey here than all other plants put together, as a general thing, but it failed here this year. Bees are in good shape here now. They are still working strong on broom-weed. No frost here yet at this date. It is a fine place to rear bees. If they run short of feed in the fall, we can feed them any kind of sugar for winter stores. They are never shut up in the hive over 3 days at a time, on account of cold weather. The fall of 1907 I fed my bees 400 pounds of light brown sugar, and they came out last spring in good shape.

I started in last spring with 34 nuclei, and increased to 100 colonies by dividing and rearing queen-cells by the Doolittle plan. When the cells were 9 days old, I would take the new colony and set it back behind the old colony, and lift out the frame that had the queen on it and set it in the new hive with another frame of hatching brood and a frame of foundation between, and other foundation as fast as they would use it. In 24 hours I gave the queenless part the queen-cell. When both colonies became strong I made an entrance in the back of the hive that I gave the queen-cell, and picked the other hive up and carried it to the other side of the bee-yard, and that threw all the force of both colonies together, as the bees I carried off would go and get a load of honey and come back to the old stand and go in at the back entrance. All the colonies I worked in this way stored about 100 pounds of honey each, and the increase will be good for next year. There is a plant getting started in this country, called the spider-plant. From the way it is recommended, and from the way the bees work on it, it must be a wonderful honey-plant.

Castor beans make a fine shade for bees. They grow 8 or 10 feet high. They shed their leaves in the fall, so that the bees get advantage of the sun through the fall and winter. Plant a hill on each side of the hive.

Taft, Tex., Dec. 4. S. Campbell.

A Busy Pastor's Report.

I began last spring with 2 strong colonies. One of them sent out 4 swarms and the other 2; all of which I hived, and they gave 150 pounds of as fine honey as I have ever tasted. So I now have 8 colonies, all in good condition, to go into winter quarters.

Another season I hope to keep down the afterswarms, but this year I let them swarm all they would, as I wanted the extra colonies.

(Rev.) H. R. Upton.

Rapid City, S. D., Nov. 16.

[Such a report from a beginner, a busy pastor, is enough to make some of the veterans turn green with envy. A yield of 75 pounds per colony with 300 percent increase! Next year it would make a crop of 600 pounds, ending the season with 32 colonies; and the year after 2400 pounds and 128 colonies. Then increase would not be necessary, and no telling what the crop might be.

But our good friend need not be disappointed to find this is only on paper. So good a season may not come again for years. Besides, 2 colonies in a given locality will do vastly better than 100. But so good a beginning is much to be thankful for.—Editor.]

Some Ignorant Farmer Bee-Keepers.

The fall of 1907 I had 12 colonies of bees. I lost one during the winter and one swarmed out in early spring. That left me with 10. I increased to 27 colonies, and got 1365 sections of honey, mostly white clover, but did not get as good a price as last year. This was a good year for bees, but the farmer bee-keepers are the men that are breaking down the prices of honey, coming into town with their honey just as taken from the hive, going into the saloons and giving a section of honey for a glass of beer, and you can not get one of them to take a bee-paper. If you say anything to them, they will say, "I know enough. I have it in my head." So that is the way it goes.

In September, when I was requeening some colonies, I gave a queen to a colony of bees, and they accepted her all right, and the last of November they had a flight and then superseded her. Can any one tell me why they did that?

I had 2 queens in the same hive in July. A colony swarmed and in September I found 2 as nice laying queens in the old hive as any one wishes.

I must say a word for the American Bee Journal. I think it is worth $1.00 a year. I would be willing to pay that just for the instruction that Dr. Miller gives in his "Question-Box."

J. C. Cunningham.

Streator, Ill., Dec. 17.

Good Year for Honey.

All things considered, this (1908) has been a good year for honey. Early in the season it was too cold. Then it came off dry, but when about 2 weeks of the white clover season was gone, the honey season opened up fine. White clover covered hill and dale with a complete snow-white covering, and the bees just tumbled over one another to get into their hives. In fact, some of them would fly in through the ⅞-inch opening, and stored as fine a quality of honey as I ever saw, and they capped it as white as white paper. At one time I had 1200 sections on 16 colonies. I always put plenty of sections on so that they can get their 2, 3, and even 4 section supers on one hive. And as fast as they are full, remove them, putting back the partly filled ones, filling the super with new ones, putting the partly filled ones in the middle of the super. This instruction would seem useless probably to a majority of bee-keepers, but when we see bee-keepers in the midst of a good honey-flow with only one super on, and it full all but the corner sections, and probably no sections nearer than the supply store, why, they need instruction.

Another reason why we get no more honey is that probably 2-3 of the bee-keepers depend upon asking their neighbors how and when to put on sections, and will be much surprised when they see your sections are on, and say, "Why, I haven't bought any yet!" Every bee-keeper with one colony, ought to have a good—no, they're all good that I ever saw—bee-paper, and read it through. He would then be informed as to when and how. I am acquainted with 25 bee-keepers that I could visit in one day, and none of them, that I know of, takes a bee-paper. Then when you see their honey in the stores, for sale, you are sure they don't, else they don't follow their instructions. I will give one instance of one of these bee-keepers:

Mr. A living in a little town, had some bees (about 8 colonies). They would commence swarming about the usual time. He would put the swarms into small store-boxes and they soon filled them, then swarmed again. He probably cut a small hole in the top of the box and put on another box on top, and so on till fall. At this time he had a lot of little boxes full of comb and honey, but not enough to last till spring, leaving them outdoors, so, when spring came, comb and empty boxes were all he had.

Menlo, Iowa. O. P. Miller.

Hunting Bee-Trees.

In the November number experiences with bees are called for. Now that means me. I am not a bee-man. The past year is the first I ever kept bees, as I always gave them away. But experiences. For 25 years I have been interested in bees, and often intermingled too, but it was always fun. I have always enjoyed hunting bee-trees a great deal, but enjoy finding them best, then getting the bees into a modern hive 8-frame Langstroth size, made by hand) then giving them to some one who, I thought, would not abuse them.

I learned my best lessons trying to make a hive, frames and all, just like a factory-made one. Some of my first ones were so cronked that they couldn't lie still when I would place them on the ground. And the poor bees made the comb straight, but crossed 2 or more of the frames.

Now about hunting bees. I can tell you where you will find more wild bees to the square mile than any other country on earth. I am convinced, or as Dr. Miller would say, "I rather think," it is in Oklahoma, in Cherokee County, where the Ozark mountains extend west to Grand River,, and seem unable to cross. There are lots of black-jack, oak timber, hickory, walnut, pecan—in fact, all the woods that grow any place else, and some that don't, like persimmon, white sumac, gum, and pawpaw. So, of course, you find the negro and the opossum just as often as you find a bee-tree. So it often happens that you find a bee-tree in a 'coon tree. (A negro will own the tree.) So now, "what you gwan to do. Dem dar 'coons what am rested in dat tree might all dun be on yo back fo yo gits dot tree haf down. Better chop lite, white-man."

But if the Indian owns it, go ahead just like it was your own, and no trouble thought of.

But to get to the point. How do you find the bees and tree? "To do this would take a book," Dr. Miller would say. Now I am not complaining of Dr. Miller making short answers. How plain and just he does answer our ofttimes foolish questions! But after that bee again. There she goes over on those newly bloomed plum-trees. Take your box in the left hand, go up carefully, don't jar the bushes or she's gone. Now, reach out and carefully take her by a wing and throw her in your box. What kind of a box? A cigar-box with a glass cover on top. Slide the glass shut quick, and then see if your bee is in. Yes? and has she found the drop of honey on the bottom? If so, just set the box on a stump, log, or the ground, and wait till she is full and ready to start to her home. "I hardly the glass and run to the side, end, or corner, towards the tree, or her home. "I hardly think so," you say. To prove this, don't go to Oklahoma, don't go out 6 or 8 miles in the timber; just take the box at home, go to the watering-place, catch a bee, and try it out. After she runs to a certain corner see how far across the box she will come before she turns back. Now turn the box square around, and see if she doesn't give up that corner for another. Let her out, and if you have a good eye and a "rubberneck," you may see her line for home. Then find the tree if you can.

I think if I read the American Bee Journal till spring I will find out that there is still something to learn about bees.

L. W. Benson.

Grand Junction, Colo., Dec. 10.

The Pretty Hummer.

What is more gentle than a wind in summer?
What is more soothing than the pretty hummer
That stays one moment in an open flower,
And buzzes cheerily from bower to bower?

—Keats.

S. Minn. and W. Wis. Convention.

The Southern Minnesota and Western Wisconsin Bee-Keepers' Association will hold their annual convention Feb. 23 and 24, 1909, in the courthouse at Winona, Minn. All interested are cordially invited.

O. S. Holland, *Sec.*

Nebraska State Convention.

The annual meeting of the Nebraska State Bee-Keepers' Association will be held at 2 p. m., Wednesday, January 20, in Room 109, Agricultural Hall, State Farm Campus, Lincoln, Neb. An especially good program has been prepared this year, and all bee-keepers should take advantage of this opportunity of exchanging ideas, and receiving practical help for the coming year.

Lillian E. Trester, *Sec.*

Western Honey-Producers to Meet.

The third annual convention of the Western Honey-Producers' Association will be held January 20 and 21, 1909, in the Library Building at Sioux City, Iowa. It is composed of bee-keepers of Iowa, Minnesota, South Dakota, Nebraska, Utah, and California. They are assisting each other in a way that is worth while, by their systematic advertising, and marketing of honey.

Endeavors will be made to make this one of the most helpful conventions that the Association has held, and a sweeping invitation is sent to all that are interested in progressive bee-culture to be present, and to be prepared to give something of interest. To those who are interested in honey as a food a cordial invitation is extended to be present and see the thought and energy the bee-keepers are putting into their art to produce the best honey possible.

Mr. N. E. France, General Manager of the National Bee-Keepers' Association has promised to be present. One of the prominent features of this meeting will be an effort to secure legislation that will assist in checking the spread of bee-diseases in South Dakota and Iowa.

The question-box will be another prominent feature, and now is the time to begin to think about the things that you want to know more about, and to hand them into the question-box.

Remember the date, January 20 and 21, 1909.

Come, and ask your neighbors to come.

Thomas Chantry, *Pres.*

E. G. Brown, *Sec.*

Bee-Supplies in Tennessee.

Otto Schwill & Co., 18 S. Front St., Memphis, Tenn., have recently put in a full line of the popular Lewis bee-ware. This concern are also extensive dealers in seeds of various kinds. Send to them for their free catalog. Their advertisement will be found on another page of this number of the American Bee Journal, which kindly mention when writing to them.

Helps for the Poultry Industry.

Incubators have come into common use, and some few makes have established their right to the confidence of the public. Prominent in this class stand the "Excelsior" and "Wooden Hen," the former having been one of the earliest of the artificial hatching machines put on the market.

Both types are built upon practical lines, and have won the approval of thousands of poultrymen everywhere. They are made in sizes varying from [illegible] to 600 eggs, thus adapt-ing themselves to poultry plants great and small.

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"Excelsior" and "Wooden Hen" Incubators and Brooders are illustrated and described in attractive catalogues and literature issued by the manufacturer, Geo. H. Stahl, Box C 1, Quincy, Ill., who will gladly mail same to any address upon request.

Unwise Economy.

Oftentimes farmers save a mite by buying nursery stock of some traveling agent or irresponsible mail-order dealer; but there is a big risk in doing that. Fruiting time may bring great disappointment. It is better to order nursery stock of a well established nurseryman. W. N. Scarff, New Castle, Ohio, has been before the fruitgrowers of the country for years and has established a reputation.

"Scarff Bearing Strains" of blackberries and small fruits earn $300 or more per acre.

If you write for Mr. Scarff's catalog and ask him, he will enclose a well-rooted, vigorous, small-fruit plant free. Please mention the American Bee Journal also when writing.

A Generous Offer.

The special attention of our readers is called to the very liberal offer on another page in this issue, of the Hawkins Publishing Co., who publish that excellent poultry paper, "Poultry Husbandry." Arrangements have been made with the publishers of three other excellent papers for the farm whereby the four papers may be had for one year together with "Chick Culture," a very valuable book on poultry-raising by Dr. A. A. Brigham, all for one dollar. Read the advertisement clear through, for the offer will certainly interest you. And when sending your order, please mention the American Bee Journal.

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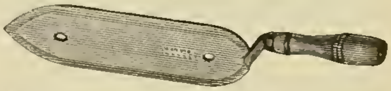

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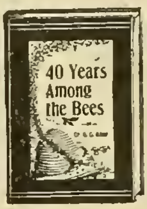

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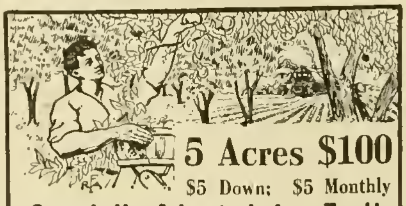

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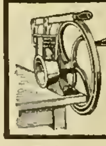

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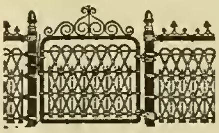

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CHICAGO, Dec. 28.—December has been a fairly good month, so far as the consumption of honey has been concerned, when we compare it with other years, and we are hoping that the next 3 months will see more than a normal demand, as the quality has never been excelled of the last crop, and the prices are low compared with other commodities. Sales made during the month have been at former quotations, with fancy comb at 14c, and the No. 1 to A No. 1 at 12 1-2 to 13c; other grades from 1 to 3c lower, with extracted, white, ranging from 7 to 8c, the amber grades from 6 to 7c, with beeswax in good demand at 30c.

R. A. BURNETT & CO.

DENVER, Dec. 24.—We quote our market as follows: No. 1 white, per case of 24 sections, $3.25; No. 1 light amber, $3.00; No. 2, $2.75. White extracted, 8⅓ to 9c; light amber, 7 1-2 to 8c; strained, 6¾c. Our market is overstocked with both comb and extracted honey; demand is light, and we do not expect to see any improvement until after the middle of January. We pay 24c for average yellow beeswax, delivered here.

THE COLO. HONEY PRODUCERS' ASS'N.

NEW YORK, Dec. 28.—While the demand for comb honey has not been up to that of former years, still it is fair and we think there being no overstock anywhere, so far as the Eastern markets are concerned, that we will have a fairly good demand during the next 3 months. This applies only to fancy No. 1 white. Off grades have been neglected right along, and of this we have a large stock still on hand, with buyers hard to find. We do not think that there will be any necessity for lowering the price on fancy and No. 1 white stock, but, as far as off grades are concerned, they will have to be sold for what they will bring, and we cannot encourage shipments of these grades. We quote fancy white 14 to 15c; No. 1, 13c, off grades 10 to 12c, and dark 10 to 11c. The demand for extracted is fair with sufficient supply of all grades. We quote California white sage 8 1-2 to 9c; light amber, 8 to 8 1-2c; amber, 7 to 7 1-2c; white clover, 8 to 8 1-2c; buckwheat, 6 1-2 to 7c; Southern in barrels and half-barrels 60 to 75c per gallon, according to quality. Beeswax quiet at 28 to 30c.

HILDRETH & SEGELKEN.

LOS ANGELES, Dec. 26.—Water-white extracted, 8c; white, 7 1-2c; light amber, 7c; amber, 5c. Fancy white comb, 16c; No. 1 white, 15c; fancy light amber, 14c; No. 1 light amber, 12 1-2c.

H. J. MERCER.

CINCINNATI, Dec. 28.—The market on comb honey is very quiet. There are some sales being made at 14c for No. 1 white comb honey, but the demand is not brisk. White clover extracted honey is selling at 8c in cans; sage at 9c; amber honey in barrels at 6c. Beeswax is selling slowly at 32c.

C. H. W. WEBER.

KANSAS CITY, Dec. 28.—The honey situation in this market is as follows: Receipts are heavy, sufficient to supply the demand for some time, as the demand is limited both on comb and extracted. We quote comb honey in 24-section, no-drip cases—extra fancy at $3.00 per case; No. 1 from $2.75 to $2.90 per case; No. 2 at $2.50 per case. Extracted in 60-pound cans, white, 8c; amber, 7 1-2c. Beeswax, No. 1 28c.

C. C. CLEMONS PROD. CO.

ZANESVILLE, OHIO, Dec. 28.—At this the holiday season there is practically no demand for honey, money being spent in other channels. For No. 1 to fancy white clover comb the jobbing trade offers 13 to 14c delivered; and for best clover extracted 8c. No demand for off grades. The wholesale market is practically unchanged, though dealers would make some concessions to effect sales. Good, clean beeswax brings on arrival 29c cash, or 30c in exchange for merchandise.

EDMUND W. PEIRCE.

INDIANAPOLIS, Dec. 26.—The demand for best grade of honey is holding up remarkably well, although a feature of dullness is naturally expected at this season of the year. Producers are offering fancy white comb at 12½c; No. 1 white comb at 12c. White clover extracted in 5-gallon cans at 7c. There is no established price on amber grades, and almost no demand. Very little honey is now being offered by producers, and I look for a cleaned up market long before the arrival of any new crop. It is evident that bee-keepers need have no fear of an over-production of honey. Beeswax is steady at 28c cash, or 30c in exchange for merchandise.

WALTER S. POUDER.

TOLEDO, Dec. 24.—Fancy white clover honey brings in a retail way 15 to 15½; No. 1, 14½ to 15c; with very little demand for lower grades. Extracted white clover in barrels will bring 7 to 7 1-2c; in cans from ½c to 1c higher; light amber, 6 to 6 1-2c in cans or barrels. As usual during the holiday season the demand for comb honey or extracted has been very light this month, and while we look for a limited demand after the first of the year, as past experience has proven, we do not look for as big a demand as there has been the past two or three months. Beeswax is coming in more plentifully, and is bringing on the market in a small way 30 to 32c. These are our selling prices, and not what we pay.

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Send for our prices on Extracted White Clover and Amber Fall honey.

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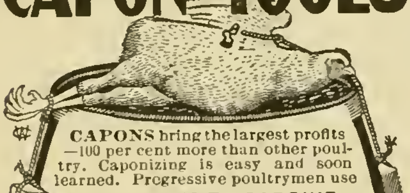

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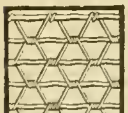

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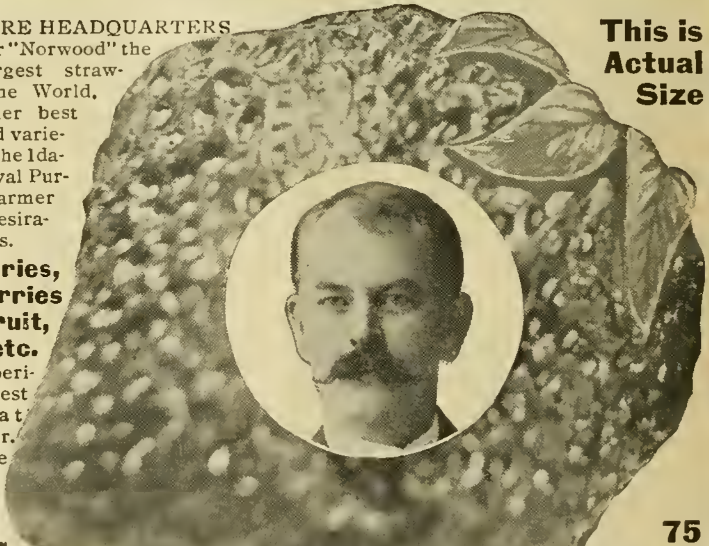

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Apiary of J. F. Diemer & Son, Liberty, Mo.—(See page 39.)

Apiary of G. A. Barbish, La Crescent, Minn.—(See page 39.)

THE AMERICAN BEE JOURNAL.

PUBLISHED MONTHLY BY

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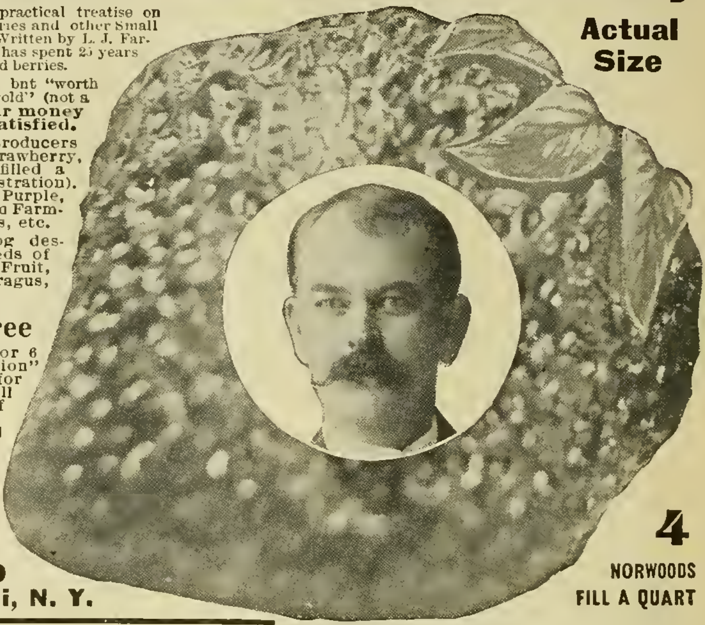

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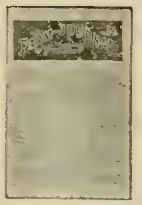

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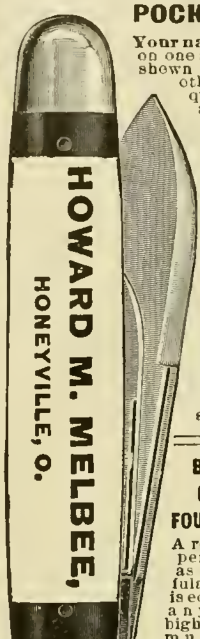

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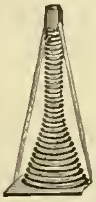

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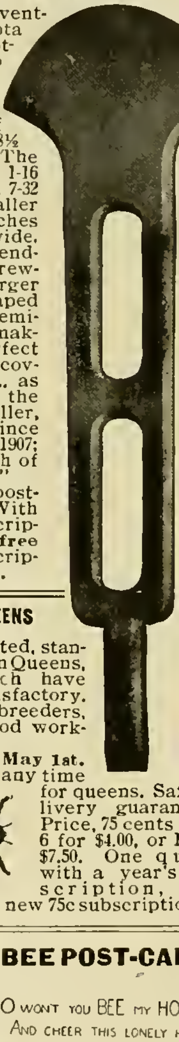

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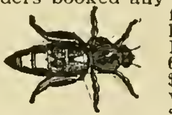

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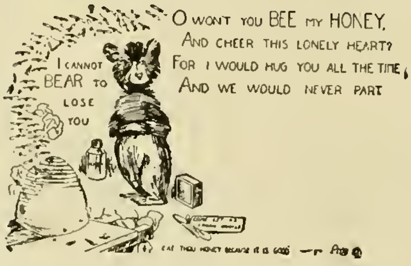
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AMERICAN BEE JOURNAL

L. L. LANGSTROTH
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(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

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GEORGE W. YORK, Editor CHICAGO, ILL., FEBRUARY, 1909 Vol. XLIX—No. 2

Editorial Notes and Comments

Uncle Sam's Sweet Tooth

It takes a million dollars a day to satisfy it with sugar, to say nothing about honey. That's according to the latest Government report, which is for the year 1907. A honey-leaflet that has had a considerable circulation says that the average annual consumption of sugar for every man, woman, and child in the United States is about 60 pounds. That was true when the leaflet was written; but the consumption has greatly increased, and for 1907 it was 82.6 pounds! At that rate the average individual eats half his own weight of sugar in a year. Of the more than 7,000,000,000 pounds consumed, 21.3 percent was of home production, 17.7 percent from our insular possessions, and 61 percent from foreign countries. Of the home product, 64 percent was from beets and 36 percent from cane. From all this the bee-keeper may at least glean the crumb of comfort that Uncle Sam's taste for sweet is not dying out.

* * *

Does Age Deteriorate Honey?

Mr. Frank Rauchfuss showed some comb honey at the bee-convention, which was three years old. It had candied and liquefied several times, and the comb was but slightly cracked. The honey was liquid, but it had lost all of its original honey-flavor, and was thick like taffy. Mr. Rauchfuss said that it could no longer be considered as honey. All the water, apparently, had left the honey, and nothing but a sticky syrup was left.—WESLEY FOSTER, in Gleanings.

Editor Root adds this footnote:

Honey would evaporate more in a Colorado climate than in the East, generally. The presumption is that a 12-year-old Colorado honey would be very different from an Eastern 12-year-old honey.

Evidently the question of the keeping of comb honey is one upon which we need more light. It is a matter of importance to know whether, at a time when prices are very low one can keep comb honey over for a higher price. If so, under what conditions? Does kind of honey, climate, or something else make a difference? Comb honey 12 years old has been reported. Can any one tell us the quality of the honey itself? It is generally agreed that honey is improved by leaving it a long time with the bees. If leaving it with the bees a few weeks improves it, would it not be better, or at least as good, if it were left with them two or three times as long, or five times as long, provided conditions remain the same? If so, can we not imitate the conditions under which honey is kept by the bees sufficiently well to keep it over at least till the next season?

These questions can not be answered so well by reasoning as by actual experiences. There are very likely a number who have kept comb honey over, say to June of the next year. Will they kindly report the result, especially as to the quality of the honey, whether favorable or unfavorable?

* * *

Should Bees be Allowed to Build Comb?

Mr. Aikin's word carries weight, and this is an important matter. It is, however, against the general belief, and the word of even so good authority as Mr. Aikin will not pass current without scrutiny in such a case. If it is true, then is it not a mistake, when running for extracted honey, to furnish entirely drawn combs, giving the bees no opportunity to build?

Mr. Aikin explains that when bees are not allowed to build comb the great quantities of wax that they secrete are used in other ways. He say, in Gleanings:

"When scraping sections I save the scrapings, which appear to be almost entirely propolis; but when melted they yield considerable wax. Then I have many times seen nice white wax used to fill cracks about comb-honey supers; and when there are full sets of combs already built to hold every drop of honey to be stored, I have found workers loaded with wax-scales, cracks stopped with wax, burr-combs put bere and there without stint, and, when not needed, bits of wax built against the quilts over the top-bars, sometimes amounting to a quarter or even half a pound—all this apparently is done just to get rid of the surplus wax by using it where propolis would ordinarily be used.

But that "quarter or even half a pound" seems a small quantity compared with the several pounds that must be produced by a colony that has all its comb to build. This is not by way of saying that Mr. Aikin is wrong, only that in a matter of so much importance, he must do quite a bit of "showing" to convince those who hold the general view.

Our friends who produce both chunk and extracted honey in the same apiary might help to solve this problem. To one colony, or to a number of them, let drawn combs be furnished, so that no comb need be built; to an equal number let no comb whatever be given; at the end of the season melt the chunk honey and compare the wax secured from each.

* * *

White Clover Prospects

In white-clover regions there is always interest on the part of the bee-keepers as to what white clover will do in the season next to come. That interest seems more than usual this year, and the different views expressed show that we have not the most exact knowledge on the subject so as to tell in advance just what we may expect. There are different views as to the effect on future harvests, of drouth in summer, drouth in fall, winter freezing in wet or dry soil, and in the Bee-Keepers' Review, is a discussion as to the age of white-clover plants, by Harry Lathrop. Editor Hutchinson endorses the view that Mr. Lathrop thus sums up:

"White-clover plants one year old may bloom, but are of no value for a honey crop. White clover plants *two years old* furnish the crop. White clover plants *over* two years old are not in evidence in the production of a crop of honey. It takes a good spell of wet weather to germinate a seed crop—a few showers will not do it."

From this and what precedes, it appears that Mr. Lathrop considers white clover a biennial, and perhaps sometimes an annual, for he says:

"My conclusions are that white clover is not an annual; neither is it strictly biennial."

Very likely this is a common view. We are familiar with the fact that red clover must be reseeded every 2 years, and as there is little sowing of white clover, and we are thus not familiar with its habit of growth, we at once take it for granted that white clover is like red, a biennial.

Examine a red-clover plant. A leaf-stem may start close to the ground, or it may start high up on the stalk. The whole plant is connected with only the one root, and the whole affair, root and branch, dies outright in 2 years or less from the time the seed started.

Now look at a white-clover plant. Every leaf starts from close to the ground, never high up on a stalk like the red clover. A still more striking difference is that the white clover does something that the red never does. It sends out a stolon, or runner, just like a strawberry plant, which takes root at the end, thus forming a new plant, which in its turn may again send forth runners, and so on indefinitely. It would be interesting to know how many—rather, how few—who are familiar with strawberry-runners have ever thought of such a thing as a white-clover runner. It will thus be seen that a single white-clover plant in the middle of a 10-acre field, given years enough, might cover the whole field if it never matured a seed. Any bee-keeper who takes the trouble to observe the growth of white-clover the coming spring, will easily be convinced that the botany is right in classing white clover, not as an annual nor a biennial, but as a perennial.

That still leaves it a matter of interest to know what about the value of single plants of white clover of different ages. Who will tell us whether a plant, say 5 years old, is likely to be worth anything to bees? We know something in that respect as to strawberries. If we want to set out a strawberry-bed, we do not select old plants to transplant. If we start the bed in the fall, we use plants that have started from runners only a few days or weeks previous. And in general, an old strawberry-bed is considered of little value. Yet if the runners are kept cut off, a plant will continue fruitful after it has become old, forming a large stool, yielding abundance of berries. That makes it, if we are to reason from analogy, that an old plant of white clover may or may not be a good nectar-yielder according to circumstances, with the chances in favor of the younger plants.

Sealed Covers vs. Absorbent Cushions

"We recommend sealed covers to the average bee-keeper because such persons will secure better results than with absorbing cushions. While Mr. Dadant may be able to do better without the sealed covers, it is our opinion that bee-keepers as a rule will do better by having the top of the hive sealed, and covered with warm packing. We have worked both schemes at our yard here at Medina; and while some years the absorbing cushions gave the better results, yet year in and year out the sealed cover comes out ahead."—E. R. Root, in Gleanings.

Is there not a little confusion about that "absorbent" business? Some use cushions with the idea that the air will slowly pass up through them, carrying with it all moisture. In that case there is no absorbing, and the cushions are hardly "absorbents." If there be no passage of air *through* the cushions, the moisture merely passing up into the cushions and condensing there, then the cushions are surely absorbents. Perhaps generally there is a compromise, part of the moisture passing out and part of it condensing in the cushions.

In any case, when the cushions become charged with moisture, there is advantage in drying them out when a favorable spell of weather comes.

The great harm with sealed covers comes about in this way: The cover is a single thickness of board, very cold, upon which the moisture from the bees condenses and falls in drops upon the bees. If cold enough, the moisture condenses as frost upon the under side of the cover, constantly accumulating until the weather becomes warm enough for it to melt, and then there is a small deluge. Something of this kind may occur even in a cellar, and it is easy to see that cold water falling upon the cluster is not conducive to good wintering. But there will not be the same condensation, if, as Mr. Root says, the sealed cover be "covered with warm packing." The point is that in the colder portions where bees are wintered outdoors, there should be cushions or packing of some kind, whether there be sealed covers or not. Whether that packing should be under or over the cover is not a point here considered. Possibly that ubiquitous factor—locality—may have something to say in the case.

In this connection it may be proper to say that in case of sealed covers there is not the same need of packing or cushions, if, instead of a single board, the cover be one of two layers of board, an air-space between. This, at least to some extent, takes the place of cushions, keeping the under part of the cover warmer in winter and cooler in summer.

Priority Rights in Imperial Valley

In the United States a man has a legal right to plant an apiary wherever he has a legal right to plant a potato patch. While some think that a man has a moral right to do the same wherever he has the legal right, a considerable number of bee-keepers think that no one has a moral right to establish an apiary in a field already occupied. Of this latter class there are not wanting those who believe that there should be legislation sufficient to secure by law what may be considered moral rights.

Without waiting for any legislation, the bee-keepers of Imperial Valley, in California, have determined, according to a report from J. W. George, in Gleanings, to punish any one who, in their judgment, unjustly encroaches on the territory of established bee-keepers. Imperial Valley, be it said in passing, is one of the richest spots on the face of the earth for bee-pasturage. As a preliminary step, an organization of bee-keepers has sent out a circular which reads in part as follows:

> 1. The average yield per colony of extracted honey for 1908 has been about 100 pounds, or about half as much as the two preceding years.
>
> 2. During the fall and winter of 1907, 5,000 colonies of bees were shipped into Imperial Valley, and now with those previously located comprise about 30 apiaries ranging in size from 50 to 300 colonies, and located all the way from one to 3 miles apart.
>
> 3. The second statement goes a long way toward explaining the first; for, while the shortage has been in part accounted for in various ways, the difference in the amount of honey obtained from different valley apiaries is easily traceable to the number of colonies kept in their respective neighborhoods.
>
> 4. The distance apart which apiaries may be run with profit in an alfalfa country depends altogether upon the amount of alfalfa grown in proximity to the apiaries, and the size of the apiaries. In Imperial Valley 2 to 3 miles is considered close enough.

Then at the October meeting of the Imperial Valley Bee-Keepers' Association the following resolution was adopted:

> *Resolved*, That the adjustment committee be instructed to accept all bees offered to them, and to use said bees in any manner, and as long as they are deemed necessary for the purpose of discouraging any person from placing or maintaining an apiary at any place where, in their judgment, said apiary might be detrimental to the interest of any bee-man, who, by right of prior location, had the best right to said location.

"After the adoption of the above resolution," says Mr. George, "on roll-call every member present except 2 offered 10 percent of his bees for the purpose of carrying out the resolution," and Mr. George grimly adds; "It looks very much as if any one coming into the Valley and undertaking to override the custom here would get just what he deserves."

Put in plain language, the idea is that if any one improperly encroaches upon territory already fully occupied, he will be smoked out by having so many colonies set down beside him that his bees will harvest nothing, even if takes a tenth of all the thousands of colonies in Imperial Valley.

The outcome of this move will be watched with interest.

Editor Sick and Journal Late

Owing to two attacks of tonsilitis and one of "la grippe," the editor of the American Bee Journal has been laid up at home so that he was unable to get out this number earlier. It was his longest illness in nearly 20 years. He has been singularly fortunate in this regard, as the Bee Journal, even when it was published weekly, was never late on account of the illness of this editor. He hopes it may not occur again very soon; and also indulges the further hope that the readers may be patient and forbearing, for this issue, which is 50 per cent larger than usual, was really gotten out under difficulties and circumstances that are always most trying when the editor, upon whom falls the chief work, is scarcely able to be about on account of a sickness that is very weakening, and for a time continuously so.

Miscellaneous News-Items

Forty-Eight Pages This Month

We were simply compelled to do it. We had an accumulation of contributions, miscellaneous, "Beedom-Boiled-Down"-ings, etc., that we felt should be published, if at all, while our subscribers had the time to do more reading. The spring-work time will soon be here, when so many things will crowd in that much desirable reading will be pushed aside.

But we don't think very many readers will object to receiving the extra 16 pages we have given them this month. However, at the low subscription price of 75 cents a year, we could hardly afford to do this often, and yet it looks as if it might be necessary occasionally. We would be glad to issue a 48-page, or even a 64-page, number every month, if we could afford to do so. We hope to see during the next few weeks a great down-pour of renewal and new subscriptions, which surely would be an encouragement to us to repeat very soon this 48-page affair.

Apiaries of J. F. Diemer & Son

I send 2 pictures of our home yard. The small one was taken about 12 years ago. The small boy holding the large frame of bees is my son Guy. He found the queen and turned his head to tell me just as the kodak snapped. It got him just right, and Maggie was holding the sections of comb honey. We then had about 15 colonies.

The large picture was taken 4 years ago. We had just moved some bees from an outyard and didn't have them levelled up. We now have 200 colonies in Clay Co., Mo.

Guy and Mr. Goode, of Johnson Co., Kans., are busy now arranging for between 300 and 400 colonies of bees, and will keep them there. It is on the river and a splendid location, about 12 miles west of Kansas City. White clover in abundance, and also plenty of sweet clover and fall flowers. My place is one mile from Liberty, and 15 miles from Kansas City.

We run for extracted honey, using 8-frame hives and Italian bees. We had a big crop this year.

J. F. Diemer.

Liberty, Mo., Oct. 12.

It's "Grandpa Dittmer" Now

Yes, It's a fact. Gus Dittmer, of the Gus Dittmer Co., Augusta, Wis., is "tickled all over" because of the arrival of a grandson at the home of his son "Fred." It was born about Dec. 1, 1908, and its grandpa never let us know a word about it until Jan. 21! It is surprising how long some people can keep good things to themselves. We hope this will insure the continuation for a long time of the manufacture of the Dittmer comb foundation. Increasing demand for it will no doubt necessitate an increase in the membership of the Company manufacturing it. Almost any firm needs new blood injected into it occasionally, in order to insure its efficiency and continued progress. Our congratulations to "Gus," and all down the line of the Dittmer family.

The Detroit National Report

This report was mailed to the members of the National Bee-Keepers' Association about Jan. 10, 1909. It is a pamphlet of 130 pages, and contains, besides the report of the Detroit convention, a membership list of the Association with honey crop report; financial statements; report of the General Manager for 1908; and the Constitution of the National. It ought to be in the hands of every bee-keeper. A good way to get it is to send $1.00 for annual membership dues to the General Manager, N. E. France, Platteville, Wis., and thus not only receive a copy of this valuable book, but also become identified with the largest organization of bee-keepers in America.

Apiary of E. F. Koch

I send a picture of my apiary which I started about 4 years ago with a double-bitted ax and a soap-box. The trees in the picture are evergreen. You will notice the wind has been playing some kind of a game with my bee-tent. I have another yard to the right of the house.

E. F. Koch.

Apiary of G. A. Barbish

I send you a picture of my apiary, myself, wife and baby. I started to keep bees about 8 years ago, but like other bee-keepers I had complete losses, which however, did not prevent me from starting over again.

I have at present 18 large colonies mainly in 10-frame dovetailed hives, running mostly for extracted honey. My bees are all Italians, and with the exception of 2 colonies are very gentle.

In the second row of hives you will notice a grape trellis running the whole length of the row. It shades the bees during the hottest part of the day, and it is fine for me to work, as robber-bees do not bother nearly so much as when working on the other row of colonies.

This has been a fairly good season for honey. White clover yielded well, but basswood yielded hardly any honey. There is a little honey coming in now from the second crop of red clover and fall flowers, but it will not amount to much, as it is too dry. I have extracted some over 500 pounds from 14 colonies, but I think I will get at least 200 pounds more. Now this would not be considered very much by an expert bee-keeper, but by taking everything into consideration—a novice in bee-keeping and not a very good locality—I think I do fairly well. Had I known years ago, when I started in bee-keeping, of the existence of such grand and helpful journals in bee-keeping as the American Bee Journal and others, I certainly would have been more successful than I have been, but now, with the aid of such valuable journals, and my past experience, I am, as Dr. Miller states it, gradually growing in the business. I

Apiary of E. F. Koch, of Collbran, Colo.

now keep a record of all my queens and colonies, so I know exactly what is going on in each hive. I winter my bees in the cellar under the house, and the past years did not suffer any loss whatever.

I wish to say that I like the American Bee Journal very much, and will never be without it. G. A. Barbish.

La Crescent, Minn., Sept. 3.

◆

Uses of Honey

The following paragraphs appeared in the Philadelphia Press, on the uses of honey:

> The action of honey on the teeth is not at all injurious as is the case with candy. Those who have tried it say that in preserving fruit, the formic acid honey contains makes a better preservative than sugar syrup. For throat and lung troubles, honey is excellent, in many cases superior to cod liver oil. It is also valuable in cases of croup and colds. As an external application it is irritating while clear, but soothing when diluted. It is laxative and sedative, and physicians say that in diseases of the bladder and kidneys it is a sovereign remedy.
>
> In mead and harvest drinks, honey has considerable of the same effect as wine and stimulants, without their injurious effects. It is concentrated and easy of assimilation, and furnishes the same elements of nutrition as sugar and starch, both energy and warmth.

Mr. C. G. Chevalier, of Maryland, kindly sent us the above item. It would be well if bee-keepers generally would have it copied in their local newspapers.

A certain physician in the East, who for years was annually afflicted with "la grippe," began to use honey as a daily food, and since doing so has not had an attack of that affliction. Score another one for honey!

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Beet-Sugar for Bees

J. Enclund, writing from Sweden, in Gleanings, says they have only beet-sugar, and he feeds about 1000 pounds to 60 or 70 colonies every fall, and the bees do well on it. So it would seem that at least sometimes beet-sugar is as good as that from cane.

◆

Bachmann's Super

C. H. Bachmann has invented and patented a comb-honey super which has the advantage that when not in use it can be laid out in the flat so as to occupy only one-fourth as much storage-room as when fully put together. At one corner, upon the withdrawal of a pin, the dovetails pull apart, the other three corners having dovetails that act as hinges.

◆

An Appreciation of Dr. Miller

In a letter dated January 14, 1909, Hon. Eugene Secor, of Forest City, Iowa, wrote the following paragraph in reference to Dr. C. C. Miller, whose latest portrait graced the front cover-page of the January number of this Journal:

> "I am glad to see the genial face of Dr. Miller in the American Bee Journal for January, which I have just received. What a void will be left in the bee-keepers' ranks when he is gone. I dread to contemplate it. There is nobody in all the world to fill his place. He has given the greatest uplift to the profession of any man engaged in the production of honey. Long may he live!"

Mr. Secor is entirely right in saying "there is nobody in all the world to fill his place." Dr. Miller has a place all his own. He made it himself, during the many years of faithful and devoted service to the very best interest of bee-keeping. He deserves his place. No one can take it from him. In fact, we don't know any one who would want to try to take his place, for no one would be so selfish or so conceited as to think he could fill Dr. Miller's place. We all need to make places for ourselves. Each has a work to do that no other can do for us. If each does not do his own work, it will never be done. Some think that one's work is born with him, and that certainly is not a very erroneous idea. Each needs to get in close contact with his job, and stick to it until life's end. "Happy is he who has found his work. Let him ask no other blessedness. Labor is life." There is room for all—there is work for all—and all should be faithful to the trust that is given them in this work-a-day world.

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The Bee a Winner in France

Mr. C. P. Dadant has kindly sent us the following bit of news from a French paper:

> Among other European news, I have received information, through Mr. E. Giraud, of Le Landreau, France, of a vote taken, among the readers of a Paris daily, "Le Petit Parisien," for the 10 most useful domestic animals. The honey-bee was one of the winners. The vote ran as follows:

1.	Horse	1,269,872	votes.
2.	Cow	1,243,117	"
3.	Dog	1,203,473	"
4.	Hen	1,015,863	"
5.	Ox	1,015,553	"
6.	Hog	991,163	"
7.	Sheep	746,303	"
8.	Camel	629,859	"
9.	Ewe	610,596	"
10.	Honey-bee	523,843	"

> As in the above vote there is double voting on two races—cow and ox, sheep and ewe—this really puts the honey-bee eighth on the list of useful domestic animals. The high vote concerning the dog is due to the fact that the herding of cattle and sheep with shepherd dogs is practiced a great deal more in Europe than in America. Every village has a number of dogs devoted to this useful purpose.
>
> C. P. Dadant.

This is a very interesting item. We wonder what place the honey-bee would occupy if a similar vote were taken in the United States. The hens seem to be up pretty near the top in France. That is something "to crow over," or perhaps "cackle about."

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Big Prehistoric Elephant

No, this is nothing about bees at all. But a bee-keeper is connected with it, and seemed to have an elephant on his hands, even if it was one that has been dead quite awhile. The following paragraph tells all about it:

> REMAINS OF A MAMMOTH IN CALIFORNIA.
>
> The remains of a prehistoric elephant of mammoth proportions were unearthed recently in the bed of a small creek in Puddingstone Canyon, half a mile north of San Dimas, by Prof. A. J. Cook, head of the department of biology of Pomona College, Cal., and Edward P. Terry, a student. The bone frame, which is in a fair state of preservation, measures 26 feet in length, and 16 feet in height, and what remains of each of the enormous tusks is 10 feet long. The parts of the huge skeleton that could be safely handled, were removed carefully to Claremont, and are to be placed in the museum of Pomona College. The discovery was accidental. The skeleton lay diagonally across the stream with only six inches of ground over it.—*Scientific American*.

Dr. Piero, of Chicago, ran across the above item in the Pacific Medical Journal, and sent it in for our columns. Prof. Cook seems to have a bigger thing than bees to look after now.

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To New Jersey Bee-Keepers

We are asked to call the special attention of all New Jersey bee-keepers to the following:

> Foul brood is rampant in many parts of New Jersey. In some localities it has swept out entire apiaries. This has been particularly true in Hunterdon county. It seems to be on the increase in some of the southern counties of the State. In one instance it was found scattered throughout a large apiary, and the owner was obliged to apply wholesale treatment to the whole yard last summer. Then there is scattered throughout the whole State the small, careless bee-keeper with 3 or 4 to a dozen colonies, and many of these are in old box-hives. The disease continually lingers among this class of bee-keepers. They do not attend any conventions, nor read bee-papers or bee-books, nor do they believe their bees have the disease. They are found in practically all localities, and the careful bee-keeper finds it impossible to keep his bees free from disease under such circumstances. Taking all these conditions into consideration, it is imperative that something must be done to stop the ravages of foul brood in our State.
>
> The New Jersey Bee-Keepers' Association, through its executive committee, has prepared a foul brood law, and will have it presented to the legislature at its present session. And now comes our appeal:
>
> The executive committee wants, and must have, the support of every interested and progressive bee-keeper in New Jersey; and that support we must have at once that we may get our law passed at the present session of the legislature, and in operation the coming season.
>
> The present membership of the Association are a unit in support of the law, but the membership is small to what it should be. Twelve counties do not at present have a single paid-up member. We want to present a solid front from Sussex to Cape May, and from the Delaware to the Atlantic. "In union there is strength."
>
> What would the executive committee say when we go before the legislative committee if asked, as we would likely be, "How united is the support of the bee-keepers?" We would have to reply that only 8 counties have members, and 12 counties are without a single member?
>
> Then there are other reasons why we want to increase the membership. The more members, the more funds in the treasurer's hands, and that means more interesting and more practical programs. We are planning to hold a field-meeting next June, and a 2-day's annual meeting next winter.
>
> Then if our membership increases and includes the whole State, we will be able to get an appropriation from the State, as we are a branch of the State Board of Agriculture. The present secretary of the State Board of Agriculture is in hearty accord with us.
>
> Further, we are planning to make our Association more helpful and educative in marketing our honey. We have at our finger's end both New York and Philadelphia—two of the most extensive honey markets in the United States, besides many residential towns as markets for our honey. We must take better advantage of these.
>
> We end with an appeal to every reader of the American Bee Journal in New Jersey, to join the New Jersey Bee-Keepers' Association at once. Dues are but 50 cents per year. Remit by post-office order or check to the Secretary-Treasurer. Act at once.
>
> Also write a few lines stating your experience with brood-diseases, and how you are surrounded—if by any careless, box-hive bee-keeper.
>
> Yours for a foul brood law in New Jersey for 1909, and for the advancement of the New Jersey Bee-Keepers' Association.
>
> Albert G. Hann, *Sec.-Treas.*
>
> Pittstown, N. J.

We want to emphasize the above appeal. It ought to be heeded by every bee-keeper in New Jersey. Write Mr. Hann *at once*, as he requests.

Biographs of Beedomites

C. H. W. WEBER

C. H. W. Weber was born in Lemfoerde, Germany, April 25, 1844, where he lived until about 21 years of age. About the year 1856 he came to America, and straight to Cincinnati. He was employed by Chas. F. Muth & Son, where he acquitted himself very well, as was shown later. But he was anxious to go into the merchant trade for himself.

In 1868, Mr. Weber entered the grocery and seed business. After a successful pursuance of this business, the Chas. F. Muth & Sons Co., sold out to him. Thereupon Mr. Weber became greatly interested in bees and honey. He personally took care of 3 apiaries which he conducted on the outskirts of Cincinnati. During his spare time he was incessantly planning improvements. His "Entrance Controller," which was patented September 24, 1907, was only one of the many results.

The Late C. H. W. Weber.

Under his careful supervision, and with the aid of his son Charles, he built up quite an extensive business in the bee-keepers' supplies and honey line. After a time the equipments which he had been using for filling honey bottles were no longer capable of turning out enough goods for the demand that had been created for them. Immediately Mr. Weber began plans for improvements. After careful perusal of all that the could find concerning the matter, and after earnest thought, he successfully set up an apparatus that is capable of doing any amount of work. It is a perfect piece of mechanism, filling 6 bottles at a run. All this was done during the last year of his life.

Mr. Weber also took care of quite an extensive seed business, and by the fine attention he gave his trade he gained many friends among the farmers near Cincinnati, as well as in Kentucky and Indiana, who greatly mourn the loss of so esteemed a friend.

After his return from the National Bee-Keepers' convention in October, held at Detroit, Mr. Weber underwent a delicate operation. He seemed to rally unexpectedly well for a few days, when he had a very serious attack of pneumonia. With good care, and a physician's skill, he was helped quite a little. He seemed to be recovering nicely when another attack of pleurisy and pneumonia weakened him. It was with the utmost skill that his body was cleared of this terrible sickness, but he was in such a weakened condition that he failed to recover satisfactorily, and on Jan. 1, 1909, the end came to his earthly suffering. He leaves a wife and 7 children who mourn the loss of a dear husband and father.

We had the pleasure of a personal acquaintance with Mr. Weber for many years. Through his advertisements, and otherwise, in the American Bee Journal, he was well and favorably known to hosts of bee-keepers. He had made a reputation for honesty and square dealing, which brought him a large and well-merited patronage along the lines of bee-keepers' supplies, honey, seeds, etc. It may not be generally known, but for years he has had an apiary of 40 or 50 colonies on the flat roof of his store building in the heart of the business district of Cincinnati. We had the pleasure, several years ago, of visiting his apiary and viewing from its height the large range of territory from which the bees gathered many tons of honey.

Mr. Weber was an enthusiast in all the lines of business in which he was interested. He was very quiet and unassuming in his manner, but always won his share of the patronage of bee-keepers and others who desired to deal with a firm whose responsibility and reliability were unquestioned.

Mr. Weber attended several of the National conventions of bee-keepers during the past few years. He was a staunch friend of the American Bee Journal and its editor, who greatly valued his loyalty and devotion. We are glad to know that his business is to be continued by his son Charles, who, no doubt, will follow in the footsteps of his father, and continue to maintain a prosperous business at the old stand.

The sympathy of thousands of bee-keepers all over the land will go out to Mr. Weber's family in their bereavement.

August Josephson.

Mr. August Josephson, formerly of Lockport Ill., but for the last two years of Granville, died in November, 1908, at Waukesha, Wis., where he had gone for his health. Mr. Josephson had been engaged in bee-keeping for a number of years, and was very successful. He was born in Sweden, Nov. 7, 1867, and came to America in 1886. He was active in church and Sunday-school work, and was highly respected where he lived. He leaves a widow and five children, all of the latter being under 10 years of age. Surely his bereaved family will have the sincere sympathy of all their bee-keeping friends and others who know them.

Mrs. Wheeler D. Wright.

After an extended illness, K. Eliza Wright, of Altamont, N. Y., passed from this life December 26, 1908, at the age of 55 years. She was the wife of W. D. Wright, one of the efficient foul brood inspectors of New York State. Mr. Wright will have the sympathy of all his bee-keeping friends in his bereavement.

Richard Stolley.

Mr. and Mrs. William Stolley, Sr., of Grand Island, Nebr., mourn the loss of their youngest son, Richard, who passed away on December 30, 1908, at the age of about 41 years. He was the support and hope of his parents in their old age. His father is well known to many readers of the American Bee Journal.

There were 175 vehicles in the funeral procession. The cemetery is located over one mile from his father's home, and when the first of the procession arrived at the open grave, the last of the vehicles had not yet left the home grounds.

During his life he "saw the buffalo disappear and the red man take his flight; he saw the herds go and the farmer take his place; he saw the little settlement known as Grand Island, grow to a city of 10,000 inhabitants; he saw the desert wastes made to bloom as the rose; and he saw the ignorant barbarians supplanted by the scholar and the school. * * *

"With a heart of love he lived for others, and was unmindful of himself. He has left the world better for his living, and has thus not journeyed here in vain. He loved his father and mother, and hoped to live that he might be as a staff unto them in their declining years." These are the words of one who spoke concerning the life of Richard Stolley. The earnest sympathy of a host of friends will go out to the sorrowing family in this their time of mourning.

Duncan Cameron McLeod.

D. C. McLeod, of Pana, Ill., died December 3, 1908, at the age of 81 years. He and Mrs. McLeod celebrated their 50th wedding anniversary last July. He had been a bee-keeper for many years, and a reader of the American Bee Journal.

R. B. Holbrook.

R. B. Holbrook was a member of the Chicago-Northwestern Association, and attended its last meeting in December, 1908. On account of continued ill health and despondency, he committed suicide January 4, 1909, at South Elgin, Ill., by shooting through the head. Unlike most suicides, Mr. Holbrook had made careful preparation for the step, and his earthly affairs were all well settled before he ended his life.

Mr. Holbrook was 45 years of age, and for several years was a prominent beekeeper at Mayfair, Ill., (a Chicago suburb) from which place he moved to South Elgin, with 100 colonies of bees, several months ago.

In a note to his wife he gave explicit instructions as to the conduct of her affairs, advising her to continue to care for the bees, but to dispose of their poultry-business.

Mr. Holbrook had been chief engineer for several large firms in the East before coming to Chicago several years ago. At 15 years of age, when most boys are building up their bodies, he was compelled by death of his father to go to work to support the family, and under the severe strain his health became impaired. When later in life he found his health failing rapidly, he gave up his engineering work and moved to Mayfair, where he took up bee-culture as a business. When he and his wife decided to add chicken-raising to their bee-keeping they needed more room, and so purchased a place at South Elgin last fall.

Mr. Holbrook was a very pleasant gentleman to meet, and took a deep interest in the conventions of the Chicago-Northwestern Bee-Keepers' Association. His name will appear quite often in the published report of the last meeting, which will soon be issued in connection with the report of the Illinois State Bee-Keepers' Association. Mrs. Holbrook will have the sympathy of all in her untimely and unexpected sorrow.

Our
Bee-Keeping
Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Putting Hives Together Almost Putting Married Folks Apart.

The nearest to a quarrel that "my John" and I ever came, after 25 years of married life, was when we came to put together the bee-hives we purchased last spring. There were at least 100 pieces for each hive, and the hives were entirely different from those I had, so it puzzled us considerably to fit the pieces together to comprise a whole hive. Several pieces I was sure went one place, and he thought another. We settled the matter of the 3-cornered blocks for contracting the bee-entrances, by writing to the manufacturer and asking what they were for.

After much wrangling we built our hives. So take my advice, and buy them built and save a divorce-suit. OHIO BEE-WOMAN.

The carriage on such bulky articles as hives made up is so heavy that it might be as expensive as a divorce-suit. Possibly the expense is not the only item, and if you set so much store by your John that you don't want to lose him, get hives without so many pieces.

The 8 or 10 frame dovetailed hives would fill the bill. They are so simple in construction that no divorce-suit could possibly grow out of their building. If, however, you must have a 100-piece hive, get a single one ready made as a pattern, and the rest "knock-down."

The Miller T-Super.

"A Reader" (page 24) seems not entirely suited with the T-super. As it was one of the first he tried, it is quite possible that his inexperience had something to do in the case, and that if he were to give it a trial now it might please him better. In this "locality" we have found nothing better, and we have tried perhaps a larger number than has "A Reader."

His chief objection is that the exposed surfaces of the sections are "bee-stained." It is true that bees have the chance, if they will, to cover the entire top and bottom with bee-glue. But bees do not care much to plaster bee-glue over a plain surface. Their greatest delight is to plug it into all cracks and crevices. So it happens that the first supers taken off may be about as clean as when put on, whereas when tops and bottoms are protected they manage to crowd into the cracks some bee-glue in spite of the coverings. Even if, later on, the bees should glue the plain surface, it is easily cleaned.

"A Reader" speaks of "sandpaper dust, which is not wholesome, all over the comb honey." He must have made very awkward work to accomplish that. We do things better here, as he would easily believe if he were to see the beautifully clean sections that always command the highest price for fancy.

He thinks the T-super not up-to-date, and a time-killer. Well, we make some effort to be up-to-date in this locality, have given trial to a number of supers, and an experience of a number of years with 1000 T-supers ought to count for something against his experiences when a beginner with a single super, or at least not a large number.

As to its being a time-killer, something may be judged from our last season's work. Two of us—neither very strong—with very little outside help, harvested nearly 20,000 sections of honey and that with the T-super. But we are not interested in that, or any other super, only so we get the best results, and if "A Reader" will mention just a few of the *many* supers that he says are *far superior*, and if among the many we can find just one that is even a little better in getting good results and in saving time, there is nothing to hinder our making a change. E. M. W.

Tincture of Myrrh for Bee-Stings.

After trying solutions of soda, salt, and carbolic acid, all in turn, for poison from bee-stings, and receiving no benefit whatever, after going 3 days with one eye swollen shut and the other nearly so; after the children cried for their mother, failing to recognize me, I read this cure for bee-stings:

Apply tincture of myrrh as soon as you are stung, and all pain and swelling will cease instantly.

And what made me provoked was that on my pantry shelf stands a large bottle of tincture of myrrh, which has been there all summer. It is not likely that I will be stung again this year, for I have "put my bees to bed" for the winter, but will send this in for some one else to try. OHIO BEE-WOMAN.

Pays to Read a Bee-Paper.

One time I went to the phone and said, "Hello, hello, is this 24 K?

"Yes."

"This is Mrs. Brown, and I am getting subscribers for the American Bee Journal."

"How much a year?"

"Seventy-five cents."

"Well, guess I can't afford to pay that much. I know enough about bees now."

"But the Journal will teach you more; how to get more honey, to rear new queens, and to get more honey out of your bees."

"Aw, well, I will let the bees take care of themselves."

"All right, good-bye."

"Good-bye."

A few days ago I was called to the phone by 24 K. He said, "Mrs. Brown, I forgot to put on any sections, and the top of the hive is solid with honey. I can not get the cover off. What shall I do?"

I said, "I don't know. Guess you will have to let the bees alone. They will take care of it. But say, I will look over my year's numbers of the American Bee Journal. I will surely find what to do, for they tell everything about bees, and how to care for them. Say, best sell me those bees. I will care for them next year. I will call up when I find what to do. Good-bye."

"Good-bye." MRS. B.

Uneasy Sister—Husband Taftlike in Appearance.

DEAR BEE-SISTERS:—What shall I do? John is getting very fat and portly, excelling our future president Taft, caused I think, from eating a generous supply of my white clover honey each meal. I am sure he does not groan and complain over every little ill, as all men do, since I have provided the honey for the table, for John and the bees do not get along. They seem to know they have come out victorious, for they have put him to flight often.

OHIO BEE-WOMAN.

Bottling Extracted Honey — After-Swarms—Hive Crowded with Honey —Entrances to Prevent Swarming.

DEAR MISS WILSON:—Kindly give me directions, as explicit as possible, in regard to bottling extracted honey.

1. Must the honey necessarily be heated? To what degree? And what is the best method when one has only a cooking-stove on which to heat it? What sort of thermometer is used, and is the temperature told by thrusting the thermometer into the heating honey? What is the object of heating the honey? Should all extracted honey be heated *before selling?*

2. September 30 a swarm issued from one of my colonies. To prevent after-swarms, I moved the old hive to a new stand. The next day, when I examined the old hive I found 2 young queens on the same comb, and 2 others hatched out while I looked over the frames. The hive was still brim full of bees, few, apparently, having returned to the old location. Afraid of swarms led by virgin queens, as they always alight in inaccessible places, I divided the colony into nuclei. Was it necessary to do so? Would the young queens have destroyed each other until only one remained? I did not care for the increase, but divided simply to prevent losing the bees. Will moving the old hive to a new stand always prevent after-swarms?

3. This fall my colonies filled their 10-frame brood-chamber full of honey, 10 frames of solid honey. Is not that *too* much for them to have, as it will not leave room for the queen to lay? The last of February or the first of March they will begin gathering again. Brood-rearing has stopped now, but I am afraid the queen will want room in which to lay, and that the hives will not be full of young bees for our early spring. They fly almost every day in the year, so, of course, they eat more than when the weather is severe.

4. What is the best way to provide more than one entrance for the bees in the different stories, to prevent swarming?

"LOUISIANA."

1. If honey is granulated, it is heated for the purpose of bringing it to the liquid state. If heated too much it is ruined. It is better not to be heated beyond 160 degrees. Any ordinary thermometer may be used to thrust into the honey, a dairy thermometer being most convenient. A thermometer, however, is not very necessary. The thing to do, where one has a small quantity to heat on a cooking-stove, is to heat it so slowly that there can be no danger of overheating. The vessel containing the honey may be put inside a larger vessel on the stove, the larger vessel (which may be a dripping-pan, although it is better to have something deeper) containing some water and a bit of shingle or something else so that the smaller vessel shall not rest directly on the bottom of the larger one. The honey may be stirred from time to time, as without this the central part will remain cool while the outer part is quite warm. It is safer to have the honey on the back part of the stove, where the heat is not great. A very safe plan is to set the vessel of honey on the reservoir of the stove, with no outside vessel, where it may take several days to liquify.

Generally, however, honey is not heated at all when being bottled, if it is not granulated. Some, however, heat it, and then seal it up, so that it may longer remain free from granulation.

There are a few localities in which customers prefer to have the honey granulated. Of course the honey must be sufficiently liquid to run into the bottles.

2. If the bees of your mother colony had any notion of sending out an after-swarm, only one queen would have been allowed to emerge, the others being held prisoners in their cells until the first or free young queen left with the swarm. So the fact that you saw two queens on the comb showed there was no intention of further swarming. Even if the hive seemed brim full of bees, you may be sure that all the field-bees after the removal went back to the old spot, and the fact that no honey was coming into the hive would discourage the bees against further swarming, even if the whole force remained.

If the swarm and the old hive are on practically the same stand, and a week later the old hive is moved to a new stand, you may generally count there will be no more swarming; but in some places there are exceptions.

3. If you really mean that the 10 frames are literally filled with honey, it is just possible that the queen may be crowded for room next spring. That, however, is a very unusual occurrence, for when brood-rearing begins in spring the consumption of honey is enormous. Keep watch in spring, and if you find every cell occupied either with brood or honey, take out a frame of honey and put an empty comb next the brood-nest.

4. When running for comb honey it will not do to have entrances to the different stories, although we sometimes leave an opening under the first super at the back of the hive. You, however, probably refer to extracted honey. Shove the second story forward enough to leave a space of ¼-inch at the back end. Shove the third story back enough to leave a like space at the front end. Do so alternately with all the stories, and finally shove the cover forward or back to leave a space on top. Strictly speaking, these are not entrances but ventilating spaces, for the bees seldom use them as entrances.

"My John" and the Bees.

I send you a pen picture of my John, who is so afraid of a honey-bee. Would that I had a kodak, and I could have sent you a very funny picture.

One very warm morning in July, I heard faint yells in the direction of the apiary. Hastening out I saw legs beneath a quilt that was hanging on a line near the apiary. Investigating closer, I found it was my John who had taken refuge under the quilt, as in a little tent. Louder yells reached me. "Come quick! The bees are after me!"

I hastened out with broom in hand. Vainly did I bang at those bees, often banging the quilt, which only brought forth more yells, such as, "Can't you hit them?" "I am nearly smothering;" and other words that would not look well in print.

At last I murdered all the bees that were near, and John came out of his tent and fanned himself.

That evening he was sitting on the porch. I heard yells again; also a loud bumping. I ran out and John lay on his back fighting a bee with his straw hat, his elbows as they came down on the porch floor making the loud bumping. I went to his rescue and killed another little bee.

He stayed in the house after that. Some way the bees don't care for John.

IMA.

"A Year's Work in an Out-Apiary"

This is the title of a 60-page, paper-bound book, 6x9 inches in size, written by G. M. Doolittle, of New York State, who is so well known to our readers. It tells how an average of 114½ pounds of comb honey per colony was secured in a poor season. Mr. Doolittle's over 35-years' experience in producing comb honey gives the weight of authority to what he says on the subject of bees and bee-keeping. The book is sent postpaid for 50 cents; or with the American Bee Journal one year— both for $1.10. Send all orders to the American Bee Journal, 118 W. Jackson Blvd., Chicago, Ill.

Books for Bee-Keepers

Every bee-keeper should have a bee-book besides a bee-paper. On another page will be found all the best books offered—either at a price, postpaid, or as a premium. If you can not earn them as premiums for getting new subscriptions, it will pay you well to purchase one or more of them. You will find them of great value. There are so many things in the books that are needful to know, and that of course could not be told over and over again in the bee-papers. If a bee-keeper can afford only one, it would better be the book rather than the paper. But now that the American Bee Journal is only 75 cents a year, of course, no bee-keeper, however limited his apiary may be, can afford to be without its monthly visits.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

Good Winter for Bees.

The weather here in Ontario, so far this winter, has been all that could be desired, as far as the wintering of bees has been concerned. Although there have been no days since the last of November, that they could fly; on the other hand, there has been no very cold weather; only once has the thermometer got down to zero here in York Co., and then that was but for one day. Hives were heavy with buckwheat honey last fall, and while I have seen heavy losses when those stores were so much in evidence, yet in nearly every case there was some honey-dew present, too. Last season, as far as I could see, there was not a particle of this article gathered, and, as a consequence, barring unforeseen circumstances, we look for good wintering.

Alsike Clover and Prospects.

Alsike clover, which is our main dependence here for honey, never went into winter in better condition than it did last fall, and with honey at present good prices, the outlook for bee-keepers next season is certainly not discouraging. However, we have learned that "prospects" do not make good crops, always; yet, on the other hand, we rarely get a crop unless the "prospects" are previously in evidence.

Dr. Miller and His "Forty Years."

Perhaps I should be ashamed to confess it, but the truth is that previous to the past few weeks, I had never read Dr. Miller's "Forty Years Among the Bees."

What do I think of it? Well, we always anticipate pleasure when we begin to read anything from the pen of Dr. Miller, and in this case it is needless to say that I was not disappointed. Not that it is a comprehensive work on bee-keeping—indeed, the author makes no such claims for the work; but somehow the easy conversational style of the book is infectious, and as we get glimpses into the home life of one known and loved by thousands of bee-keepers, a desire involuntarily asserts itself to "go thou and do likewise."

The author apologizes for the short biographical sketch which he says the publisher insisted on printing. Well, if that is the case, our hearty thanks are due the said publisher, as the biography is one of the best parts of the book.

The "grit" and determination shown by our genial friend, in his struggles for an education, cannot help but be an incentive to all young people who read the story, whether their prospective calling be bee-keeping or any other profession.

Of course there are some things in his bee-keeping instructions that we would not all agree with, but that simply adds interest to the work, for who ever heard of two bee-keepers who would not differ on a good many points as to how best to manage the bees?

Dear reader, if you have not yet read the book, by all means do so at your earliest opportunity, and be benefited, as the writer most assuredly has been by its perusal.

"Shaking" Work Into Bees.

Just at present there is quite a stir again among correspondents in bee-papers, over the now-quite-old idea of "shaking" bees to secure various results. Geo. W. Williams, in the Review, advocates shaking all the bees out in front of the hives during the honey-flow, and claims that colonies so treated will give a much larger surplus than if they had been left alone. The idea is that this treatment puts the colony in much the same condition as a newly hived swarm, and that they will then work with the vigor so characteristic of bees in the latter condition.

I do not know if there is much in his contention or not, but I do know that the "shaking," so much advocated a few years ago, is not now nearly as popular as it was at that time. This much I have learned by private conversation and correspondence, and many who were former enthusiasts of the system have discarded it almost entirely, while others who still practice it have modified the original wholesale methods, more or less. While the plan has some advantages, a continued trial of it soon reveals the fact that there are many disadvantages as well.

Cellar Wintering of Bees.

As mentioned more than once in these columns, the writer has had but little experience in cellar-wintering. However, during the past few winters, as I have been wintering part of one apiary in a cellar, I am beginning to know some of the perplexities of the indoor system. Just when to take the bees into the cellar is one of the hard things to decide, sometimes, as the past fall gave ample evidence.

While going to the Ontario convention this fall in company with that veteran bee-keeper, J. T. Storer, we were discussing this subject, and although it was but Nov. 10, I found that he had already put his bees into the cellar. While the writer thought it too early, Mr. Storer thought otherwise, as he said he felt pretty sure that the bees would not get another flight this fall. Subsequent events proved that this was not the case though, as shortly afterward the weather moderated, and the bees had frequent flights right up to the last day or so in November.

Naturally, I was feeling pleased that my bees were not in the cellar, when circumstances unexpectedly came that made it impossible for me to put the bees in the cellar till Dec. 10, after they had been exposed to 10 days of pretty cold weather after their last flight. Just now I am wondering if they would not have been better off in the cellar early in November.

The December issue of the Review, shows that even men like Mr. Hutchinson have their troubles in this line sometimes, too. He had to move some bees quite a distance to a cellar, and to make things so that the bees could not fly out while being hauled to the cellar, a half-depth body was put under each hive, the bottom of each of these extra bodies being screened. After the bees were all ready for moving, and the hives were facing every direction, the weather turned warm very quickly, and before the bees could be put into the cellar. The result was, that the bees were in an uproar, and as the hives had been shifted off their stands, it was impossible to give them a flight. They were put into the cellar and Mr. Hutchinson says they simply "roared" for a few days till the weather turned cold again. He anticipates no trouble as a result of this disturbance, but personally, believe I would be a bit uneasy if it were my bees in a like condition.

The nature of the stores in the hives will largely determine the outcome, and as we are told that they are of the best, in the case of the bees under discussion, the chances are that Mr. Hutchinson's prophecy will prove to be correct. Anyway, I hope so, and the result will be looked for with interest next spring.

Methinks as a certain good friend near Buffalo read of the hives being so fixed that the bees could not get out into the cellar, that the "smile that won't come off" must have been in evidence; for be it remembered, not so long ago, a certain editor characterized the Hershiser bottom-board as a "harmless invention," and now we find something on exactly the same principle being used by the said editor. Well, "all things come to those who wait," and our Buffalo friend will now be satisfied with his revenge, even if he did have to wait a long time for it.

Apicultural Experiment Station.

At the Ontario Bee-Keepers' Convention, held in Toronto last November. Secretary Hodgetts stated that the Ontario Department of Apiculture was considering the advisability of establishing an experimental apiary somewhere in the Province, in the near future. Now comes the announcement that the Station is to be at Jordan, Ont., where there is already a farm carried on for experimental purposes, mainly up to the present, for the advancement of fruit-culture, an industry for which the Niagara district is famous. Of course, the bee-keeping program is yet in embryo, and announcements as to the probable line of investigations to be carried forward, will be looked for with interest.

A station of that nature, properly equipped and "manned," cannot help but be a source of great benefit to the Province at large, and the project will no doubt have the hearty co-operation of all Canadian bee-keepers. One of the most important things necessary to make the scheme a success, is to see that a *thoroughly* competent person is in charge of the work. Barring that essential, everything else being perfect, an experimental apicultural station would be a negligible quantity. It is to be hoped that when an appointment is made, that that thought will be uppermost in the minds of "the powers that be."

Foul Brood Treatment — License to Keep Bees.

Seeing an article on page 339, "Feeding Sugar Instead of Honey," has caused me to ask you a few questions.

1. How did your friend positively know that his bees were free from the disease of foul brood?

2. In following the McEvoy plan of treating this disease, I have followed all directions to the letter, and the bees have passed to nice, clean, white, full-capped combs of new brood, and are hatching nicely. At what length of time and under what conditions may I look for the disease to reappear? All parts of the hive are new.

3. If in shaking on comb-foundation the second time you were to find only 3 cells of diseased brood on one frame in this second set, would you remove only the one frame, or would you shake the third time?

4. Do you think this shaking treatment in the hands of the average person who keeps bees in the "any old box or hive plan" would check or spread this disease?

5. Should this treatment be used by any but an up-to-date or expert handler of bees? (If so, that lets *me* out.)

6. How long after we see the slim, glossy, shining bees crawling in front of the hives out in the grass to die, may we look for the disease to appear, and does this always happen? I think this is one of the first symptoms in a wet, rainy season. I mean the crawling out to die.

7. If a colony of bees not treated should show all the symptoms of American foul brood during a hot, wet season—say June or July—and then when the rain stopped and the bloom came, and they should clean out all the decayed cells and fill up full of clean brood, and put in a super of fine honey, all the brood hatch, and they should build up strong with bees by October 1, and have plenty of stores for winter, and you could not find any trace of the disease except the odor or smell, what should be done with the honey?

8. What would you think of a license to keep bees, and in the license stipulate that none but movable frames were to be used? They would be much easier to inspect than old washing-machines or salt-barrels or soap-boxes. The license would help to pay the inspector. C. B. Palmer.

Bradshaw, Neb., Dec. 7, 1908.

1. Foul brood is *very* easy to see in new white combs, and might be detected by the veriest novice, while the more experienced person would possibly overlook the disease in an old black comb. In the case you refer too, a thorough examination was made by the inspector and no signs of the disease was found.

2. If abundance of honey is coming in, and some of the diseased honey has been left with the bees, the disease may not appear for some time; but, on the other hand, if nothing much is coming in from the fields at the time of treatment, signs of the disease will nearly always appear in the first generation of brood, and usually the larvæ will be dead before sealing. These remarks assume that the treatment has not been properly done, for if done right the disease *will not* appear again, i. e., if there is no robbing or other source of outside infection present.

3. Extremely risky to take out but the one comb, but in the hands of a careful person it might be tried, and results well watched.

4. and 5. No one should attempt the treatment unless fully understanding the same. Once the principles of the cure are understood, the treatment is simplicity itself. The handling of colonies in box-hives when treating, is a source of danger at all times when foul brood is present, and no tearing apart of such hives should be attempted except when honey is coming in from the fields to keep the bees from robbing.

6. I do not think the symptoms you mention are common to American foul brood, at least not in our "locality." Some other cause is clearly apparent for the condition of the bees as described. Personally, I could never tell by the outside appearance of a colony if the disease were present. Of course, if a colony is very weak at a time when they should be strong, one's suspicion will be aroused.

7. Bees never to any extent clean out the dried-down scales of American foul brood, for the simple reason that they appear unable to do so. With European or black brood the scales do not adhere to the cells so closely, and the bees do often remove them. Under the conditions you mention, I would strongly suspect that there was no disease present, and would lay the blame to starved brood due to the long spell of wet weather.

8. I would be entirely in sympathy with such a move. The Ontario Foul Brood Act gives inspectors power to order any bee-keeper, when disease is present in the apiary, to have all colonies on movable-frame hives inside of a given time stated by the inspector. The law should go farther and make it compulsory for all bees kept by anyone, to be on movable frames at all times. But say, some of the so-called movable-frame hives in some yards, are about as bad as box-hives, as the frames are often "movable" only when a crow-bar or something else as formidable is brought into requisition.

Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

Legislating for Bee-Keepers.

It looks as if the University of California will succeed in having the present law relating to bee-diseases so amended that it may be said to be an entirely new law. It will be a hot one, and will make some one stand around, even if it does not drive the dread diseases from the State. It will put up some pretty strong bars to keep diseased bees, including queens, from coming here. All colonies, nuclei, queens in cages, etc., coming into the State, or passing from one county of the State into another county thereof, must be accompanied with a certificate of good health before they can be admitted. This is much like the law relating to fruit-trees which was adopted here a number of years ago, and is now to be found on the statutes of all or nearly every State in the Union.

Mr. Ralph Benton, of the Agricultural Department of the University of California, is working strenuously to have this law enacted; in fact, I believe he drafted the bill which is probably before the Legislature by this. The bill also provides that an annual appropriation of $2,500 be made to carry on the work, which is sought to be placed mainly in the hands of the apicultural division of the University. The person to be named by this institution may be said to be Head Inspector of Apiaries, and will have co-extensive authority with the inspectors appointed by the supervisors; he may appoint deputy inspectors where the counties fail to do so.

I read the proposed law casually when on a visit to Mr. Benton's office at the University; some portions I approved, and others I did not like. The matter has been brought before several of the bee-keeping bodies of the State and was approved by them. While I am in favor of laws to stamp out foul brood, I think, however, it unwise for the State to be creating too many officers for such purpose. Either wipe out the county inspectors and turn the University corps loose upon the State to work scientifically, if it is possible so to do, or let the present law alone.

A Plea for a Revised Nomenclature.

Queer, isn't it, how the pursuit of bee-keeping has been loaded with some terms entirely unfit for the purpose they were intended to serve. I arise to post a motion (I guess that is about the best way to get it before the world) to have the next National meeting of our apiarists appoint a committee of five of the ablest men we have (I beg to decline, I can't serve) to revise our nomenclature, and coin such new words and terms as our noble pursuit may require. Such men as Dr. Miller, Prof. Phin (if he's living), and, say, the editors of our bee-papers, would be just the caper; what wrestling they would have! Now, all this talk, or whatever you choose to call it, was brought to my mind for the thousandth time when thinking or considering that disease called "bee-paralysis." Fudge! We all know that it is not paralysis. And, further, we are all at sea as to what the disease, malady or whatever it is, really is. I've tried to get expert evidence in the case for some time, and I have come to the conclusion that I know as much about the disease as the next fellow, no matter how smart a chap he may be. (Pardon me, Professor, I didn't mean you.)

Well, it's no wonder I'm "hot in the collar"; I had a couple of cases of what some would call paralysis. The books I've read when looking up facts, figures and other statistics to illuminate my benighted knowledge, yea, and not even the wise men I consulted, have been able to give me any knowledge worth a fig upon the subject. I am no pathologist nor anything with such an ending, but I venture to say that if some one could only take those sick bees and hold their mouths open long enough to pour a good dose of castor oil or epsom salts down their throats, they would soon be well and kicking as lively as crickets. What we need to do more than we do, is to keep the feet of our bees warm, their heads cool, and see that their bowels are free and open! Just in those last few words I verily believe lies the illuminated wisdom on the whole subject.

What a pity for us 'tis that Dr. T. B. Terry hasn't devoted his time to bees instead of the details of the barn-yard, and the mysteries of the human system! He would have known long ago what goes through a bee, and if he found an obstruction he would say, "Gee, haw, there!" and away would go the trouble just as "slick as greased lightning."

Bloated Bees.

A peculiar malady occasionally attacks bees in this part of the State; it has some of the appearance of dysentery, and yet none of the bees so far forget themselves as to muss the inside of their nest, in which respect they would have met the approbation of that astute scientist, William Shakespeare. No, they bloat up and seem to prefer death outside the hive rather than leave any nastiness in the hive. And it would be all right if they got outside the hive and were able to attend to the wants of nature, so therein lies the cause of the trouble—just a case, probably, of constipation. Yes, it seems to be that and nothing else, hence my remarks elsewhere about administering a laxative to sick bees. I believe a diluted honey into which is added a small quantity of senna or some salts that would not be injurious to the bees, would effect a cure.

I'm going to try some experiments on them along these lines. Large numbers of bees die in fair as well as cloudy and rainy weather; it would seem that half a colony in a couple of cases have already been decimated in this way. I believe that it is only in colonies where brood-rearing is in progress that the trouble manifests itself, hence it seems to me that the afflicted bees are the nurse-bees. Probably they suffer from some injurious pollen they ate; I notice that whenever I dissected one of these dead bees, it contained a lot of feces of a pollenly nature. A food of a purgative nature might save bees thus afflicted. Who has experience along such lines?

Some California Bee-Keepers.

The small group of men in the halftone engraving herewith was taken at the railroad depot, Monterey, a few hours after the adjournment of the bee-keepers' institute held there Dec. 28 and 29, 1908. An attempt to get the entire gathering just after adjournment proved abortive, owing to the hazy condition of the weather at that particular time. By this mishap Mr. Ralph Benton, Mr. Andrew Fife, Mr. Sem Ling, and a couple of others who were in attendance, are missing from the photograph here shown. Mr. Benton had gone to Pacific Grove and the others to other places.

Bee-Keepers Attending a California Convention.

The tall man in the group is Vernon Townsend, president of the California Central Counties Bee-Keepers' Society; next on the right is Edward Smith, next standing well in front, is H. H. W. Lawrence; then John Witham, and at the end K. M. Hennehen, foul-brood inspector for Monterey county. At the extreme left is Mr. B. Schnuchel; the name of the gentleman between the latter and the president, is forgotten.

A portion of historic Monterey bay shows between the railroad tracks and the distant sand dunes on the left. The bee-keepers shown form an historical group in one of the most historic spots in California.

In Old Monterey with the Bee-Men.

At the close of the year I made a trip to Monterey, the ancient capital of California, to attend the bee-keepers' institute. Those days were cold ones for this State, but we should expect such weather at the end of the year. I expected to meet Mr. Ralph Benton at the Oakland station; he went on an earlier train, and over the long stretch of marsh on the Alameda side of the bay. I got off an hour later and fell in with a lot of teachers going to San Jose by the Niles or foot-oft-he-hills route to attend the annual State convention of pedagogues. The ride was through a charming fruit and agricultural country. This gave me an opportunity to stop over an hour or so and see something of California's Garden City before I could proceed to Monterey on a train coming from San Francisco.

The attendance at the institute was not as large as was anticipated. It appears that sufficient notice had not been given of the meeting in the local papers; the San Francisco papers gave good notices but only the day before the meeting—too short a time for many who saw it to make arrangements to attend. Withal there were so few apiarists present, the interest was keen and enthusiastic. Mr. Andrew Fife, who has an apiary in Lassen County, where the snow lies deep during winter, was present; he had the distinction of owning bees 300 or more miles away from the place of meeting.

Two notable personages of Monterey were present. The one who attracted the most attention was Mr. Sem Ling, a worthy, though probably a very distant, cousin of Ah Sin. But Sem Ling's mission in the world is not of the kind that chimes in with those of the astute and very acute poker-playing Ah Sin, for our friend Sem Ling is a keeper of bees and a producer of garden-truck. So of Sem Ling and his manner of work I shall discourse further in time. So also of Mr. K. M. Henneken, the foul-brood inspector of Monterey County, who was a picturesque character, and spoke right out in meeting frequently. His discourse on Bee-Disease in his county revealed the fact that the way of a foul-brood doctor—at least in his part of the State—is not altogether strewn with roses. More than once he had to "hike" o'er the sands of Monterey at the glistening sight of a big double-barreled shotgun. And this will be a tale I shall unfold in some future issue of the American Bee Journal.

What would probably have been two very interesting papers were unfortunately omitted, owing to Mr. M. C. Richter's detention at Santa Barbara, whither he had gone to spend the holidays with relatives. On the whole, the several sessions were good; much was gained by those present.

Mr. Townsend, who was chosen president of the temporary organization of the Central Coast Counties Bee-Keepers' Society, is one of the alert apiarists of the State; he has a fine apiary at Soledad, and he says that his yields of honey far exceed those he obtained when he was in the lower counties of the State. W. H. H. Lawrence of Salinas, has been 5 years at the business, and withal he is well toward 65 years of age, he manages his 300 colonies as well as any old veteran, and he is well up in all modern methods; he is so much of a genius that he has introduced several labor-saving appliances of his own invention.

Another bright apiarist is C. W. Kerlin, who lives in the city, but has a large apiary well out in the hills.

Edward Smith of Hollister, San Benito County, and John Whitam, of King City, understand their business and are conducting successful apiaries. The latter had the distinction of being the only Californian present at the last meeting of the National Convention in Detroit.

Mr. B. Schnuchel has been fighting against odds at Peach Tree, to build up an apiary. His enemy is foul brood, and work as hard and intelligently as he can, he has not been able to increase the number of his colonies beyond 50. He is going to fight the enemy to the last ditch, and he hopes to win out; and he deserves to, for he is alert and progressive. It seems that the disease mentioned is much to be dreaded in Monterey County. Of this more later.

Mr. Benton is an admirable institute conductor, and his several talks on bees and bee-keeping were well received.

After the adjournment of the institute, a temporary organization of the bee-keepers in the Central Coast Counties was effected. The matter of permanent organization was passed, for the reason that the attendance was not entirely representative; it was hoped that a larger gathering should be on hand when permanent officers were elected. The officers chosen are as follows:

Vernon Townsend, president; K. F. Henneken, secretary; Edward Smith, J. Whitam, W. E. Stewart, P. Keating and W. A. Pryal, vice-presidents.

The Apiary Beautiful.

It is seldom we see a real pretty apiary; too often the bees are assigned to "any old place," as they are easily imposed upon when it comes to assigning them to living quarters. They will work well and diligently in any old barrel, box or hive, so long as it has no ill-smelling odors within and it appears suitable to them when hived. But to place a colony, whether in modern or antique hive, in an unsightly and otherwise disagreeable place, is an unpardonable oversight; it is a wrong to the bees, and to the good taste and character of the apiarist.

This fault is more noticeable in this country than it is in some of the European countries. In looking at the pictures of apiaries in British and Irish bee books and journals one is struck with the beauty of not only the surroundings but often at the hives and their arrangement as well. In all my travels up and down California I have not seen as many picturesque apiaries as I have fingers on one hand. Oftentimes an apiary of home-made and rather antiquated pattern hives will make a more pleasurable sight, as far as beauty is concerned, than will a like apiary of trim hives set up in apple-pie order. As an illustration of this, see the picture of a portion of an apiary on a certain hillside in Santa Clara county. While there is much room for improvement as to arrangement of the hives, etc., still, the apiarist will get just as much honey, it is true. And so in the case of the most inartistic apiary that ever was, unless some of the colonies are placed where the hives are too much shaded or too much exposed to cold winds.

A Pretty Little Apiary.

An apiary located among pretty trees and tropical plants, as in the half-tone showing a banana in the center and an Australian acacia in the background, is a thing of beauty—and, perhaps, a joy forever for the bees and the artistic apiarist. It is possible for large apiaries to be so arranged in California, and the cost of securing the young plants would be nominal; just think of the after-pleasure of possessing such a sylvan retreat; it would be an ambrosial bower—a place fit for the gods and the bees.

But I must leave the subject for, as I stated on a former occasion, I'm not a poet and must not take such poetical flights.

A Portion of a Natural Apiary in Santa Clara Co., Cal.

Bees Might Have Saved Father Adam.

Some little relatives who live across the bay paid us a visit the other day, and after a while were told to run about the place and gather all the fruit they could eat and carry home. In an hour or so I asked one of the young hopefuls if he was able to get plenty of nice ripe fruit. He replied that he did, but he was sure there was some nicer apricots than any he was able to get growing over the bee-hives, but he was afraid that the bees would sting him if he tried to get them; and probably they would if he molested the hives or remained any time among the colonies.

Just then it occurred to me that it was a pity for mankind that dear old Father Adam did not have some colonies of bees scattered in his orchard, in the Garden of Eden, especially under that historic apple (?) tree God forbade Eve & Co. to take any fruit from. It is a cinch, I warrant, that if the bees were nicely domiciled in old gums or even skeps, Mrs. Adam would never have got near enough to the tree for the serpent to tempt her with the forbidden fruit. Yea, the bees might have saved the human family from the state of sin, and lots of other hard things that have since hung over them. But, perhaps, none of the dear sisters would have become bee-keepers, for before Eve's vanity was her downfall, we read that not as much as a fig-leaf was worn by the sex that have since become the slaves of the dressmaker and the milliner. Just imagine Mother Eve out among the bees without as much as a veil upon her for ornament or shield against bee-stings! What a target her lovely self would have made for the honey-gatherers when they had a stinging fit on!

Convention Proceedings

The Western Honey-Producers.

The Western Honey-Producers' convention at Sioux City, Iowa, January 20, 1909, was called to order by the president, Thomas Chantry, with about 75 present. After a short talk by Mr. Chantry on why the Association was organized, and the benefits given to members, Mr. R. A. Morgan, of South Dakota, gave a short talk on Caucasian bees. He spoke of them as being the best he had ever handled. They are good winterers and their honey has white cappings. They are easy to get into supers, queens are prolific, and the strain he handled would work on rainy days when Italians would not. They collected a large amount of propolis, which was deposited at the entrance and not on the sections, any worse than Italians.

Mr. Phinny of Iowa, endorsed Mr. Morgan's remarks. He reported 10 colonies of Caucasians averaging 3 full supers of honey during 1908, while his Italians did not average half that amount.

The question-box was then taken up and the following questions read and discussed:

"Was the discussion of pickled brood at the National convention (as per report) satisfactory?"

Mr. France answered that at one time 10 years ago, pickled brood was in 90 percent of the apiaries of Wisconsin; that there is little difference in the disease in the Northern and Southern States, but that it was caused by a shortage of unsealed honey in the hive just after fruit and dandelion bloom.

"How long can combs be used without making bees smaller, or injuring quality of extracted honey?"

Mr. France said he had some combs some 30 years old; that he and Mr. Ernest R. Root had been unable, after careful measurement, to see any difference in the size, but that it was poor policy to keep combs that long, as there was a decided difference in colonies if given new combs. Also, that by carefully observing bees and honey in the same yard and flow, that the best honey came from hives with new combs above and below. With old below and new above the quality was not as good, and with the old above and below too—poorer yet. Mr. Morgan thought 8 years about as long as combs could be used.

Mr. France gave an excellent talk on how to melt up old combs, and advised the use of a large amount of water.

There was then a recess of 10 minutes, during which time frame-wiring, putting in foundation, queen-cell dipping, and different appliances, were demonstrated. which attracted every one.

After recess Mr. Morgan read a copy of the proposed foul brood law for South Dakota. After some discussion and changes recess for supper was taken

B. E. Aldrich, of Iowa, read an interesting paper on tiering up, and late extracting, which brought forth a number of questions as to the value and merits of queen-excluders, and, with further talk on the foul brood law, the meeting adjourned until the next morning.

At the morning session Mr. Morgan read a very good paper on marketing honey. Mr. France then told something about the value of honey as a food, followed by Mr. F. W. Hall, of Iowa, on his method of comb-honey production.

In the afternoon the question-box was taken up again.

"What is the first thing any one should get who wants to start bee-keeping?"

Mr. McClintock and several others advised a good bee-book, while Mr. Morgan advised a smoker.

"How can I keep my Italians from clogging the brood-chamber with honey?"

Mr. Clarke, of Iowa, advised prolific queens, while Mr. Morgan advised extracting.

The final report of the committees on foul brood laws for South Dakota and Iowa, was received, and committees were appointed to bring them before the Legislature, as follows: Iowa—F. W. Hall, D. H. L'hommedieu, and W. H. Snyder, with Mr. France. South Dakota—R. C. Morgan, T. M. Goddard, H. Gensbeck, and Mr. France.

After passing resolutions thanking Sioux City for the use of so excellent a place of meeting, and also to endeavor to secure the National convention for 1909, the meeting adjourned.

B. F. SMITH, JR.

Randolph, Nebr.

Honey as a Health-Food

This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed *free* at the bottom of front page on all orders for 100 or more copies. Send all orders to the office of the American Bee Journal.

A New Honey-Spoon.

Over in England they have invented a new honey-spoon—or at least a device in its handle that will prevent it from getting down into the jar of honey on the dining table, thus avoiding sticky fingers and spoilt table-cloths. It is a very ingenious contrivance, and should have a large sale among honey-consumers, especially bee-keepers. It is well plated on high-class nickel. We have secured some of these very unique spoons, and will mail them at 90 cents each. Or, we will send a spoon and the American Bee Journal one year—both for $1.50. It would make a fine gift.

Contributed Articles

Selling Honey as a Food

BY C. P. DADANT.

May I be permitted to deviate from the common monthly discussion of American methods in apiculture, and talk a little about what some other countries are doing? This time it will be about the sale of honey and its spread among the people as an article of food of the very best kind. Our own National Association has given prizes for essays to be inserted in the newspapers concerning the value of honey as food. This is good. But an object lesson in the sale of honey is better, especially in cities.

The January number of the Swiss "Bulletin de la Société Romande D'Apiculture" contains an article from the Progrès Apicole on the honey-fair, at Lausanne. Some years ago I called the attention of bee-keepers to this Swiss method of advertising honey. It would appear to be successful, since it is continued from year to year. This "honey-fair" is also called "honey-market," and was held in a small Park, 170 feet wide by 500 feet in length, situated, in the center of the city; it was held simultaneously with a flower-fair, which takes place every year at the same time August 24th and 25th; under three rows of large basswood trees which shelter the exhibitors from the rays of the sun. At night, a line of Venetian or Chinese lanterns hung along the walk and among the tree gives a fairy appearance to this exhibit which is continued until eleven o'clock at night.

The honey exhibit is made under the management of the bee-keepers' association, and is kept by only three or four persons. It is very much as our State Fair exhibits, as far as I can see, with this difference, however, that it is independent of any fair except the flower-fair already mentioned. Honey and flowers go well together.

The honey-fair is advertised some time beforehand. Both comb and extracted honey are on sale, all put up in the most attractive manner, and the prices are established by the bee-keepers' association. The result is that many consumers, among all classes of society, have their attention drawn to this exhibit. It is the object of an evening walk, and the family go there as they might go to the show. The knowledge that the purity of the honey on exhibition is in a manner guaranteed by the association of bee-keepers, removes any possible distrust of its purity, and my readers surely know how easy it is to sell good honey when the people who buy it have no doubt about its purity.

As I understand it, the sales are not large at these honey-fairs—a few thousand pounds only. But they serve as an introduction between the consumer and the producer; they remove the barrier which has caused the consumer to ask himself whether he can depend upon what he buys as pure, simply because he usually gets it from a man, the retailer, who often does not himself know whence it came. If the retailer does not know the producer of the honey, and has any doubt about its purity, he is ill-fitted to recommend it. When the consumer and the producer meet in the way mentioned, there is a mutual confidence established, and a demand is created which will need but little urging to be continued indefinitely.

Nothing more than a mention is needed to remind our bee-keepers that it is the first sale to a family which is the most difficult. In thousands of cases, people pass by an opportunity to buy honey, without purchasing, because their attention is not especially drawn to this matter, as well as to the healthfulness of honey, which, by the way, no one thinks of doubting if only he is certain that it is pure honey he has the opportunity to secure.

May I say that, not only in honey sales, but in the advertising of many other products, we might profitably look to Europe? We now have what is called "street-fairs," organized in many small cities, with the view of drawing the farmers and pushing sales. The dry-goods stores, the clothing and shoe stores, the photographers, restaurants, etc., do a large business, because the country people are attracted from miles around to these popular gatherings. There they see exhibits of trained dogs, heavy-weight lifters, jugglers, and side-shows of all kinds, many of which are fakes.

These street fairs are copied from those of Europe, but in Europe they have at the same time a flower exhibit, a vegetable exhibit, a horse-fair, a cattle fair; not as in our county fairs, for exhibition of only the best of all breeds, with premiums, but to sell or buy whatever you may wish to acquire or get rid of in your line. Not only you may buy there, on a stated day, any kind of a horse, cow or pig, chickens or bees, eggs, butter, honey because you are sure to find the greatest possible selection, in high or low prices according to quality, but farm hands go to find employers, carrying a green twig in their hat as a token that they want employment. The country trades with the city, and the country people trade with each other. It is a general concourse where all come, either to make sales or spend money, and is very much more useful than our noisy modern American street-fair.

In this country the great distances originally between farms and cities compelled us to resort to advertising, but the present growing aggregation of people in small centers will sooner or later induce us to use these most convenient methods of finding sales for our products, where the middleman cannot do what is readily done between individuals. Neither is this injurious to the middleman, for when exchanges are thus begun, they are usually continued by the help of this same middleman, who can always be found at the center of business, when the farmer has returned to his daily occupations.

It is far better to create a market for our honey among our own people, through such local exhibits, than to crowd our produce on the big markets where it comes back to our dealers in poorer shape, with additional charges attached for the profit of the commission man, who must live as well as the producer. If a little more of this local market hunting were practised it would have a tendency to stiffen prices, for it is the large market that sets the pace, and too much is now sent to the large markets.

The race is to the swift. The man who uses his ingenuity to sell his crop will always distance the man who waits for the market to come to him. Let us not neglect any of the means that are in our reach for success.

Hamilton, Ill.

Punching End-Bars and Wiring Frames

BY G. C. GREINER.

As it is the general opinion of the more experienced portion of our bee-keeping fraternity, that the use of full sheets of comb foundation in the brood-chamber is the better way, we may as well accept their advice and follow suit, except in certain cases, when narrow starters would suit me better.

To make the use of full sheets practical, our main frames have to be wired, and this again makes the punching of end-bars compulsory. As far as I know, we have not yet an automatically working machine, that will punch end-bars and wire frames at wholesale rate, but both jobs have to be done one at a time, by hand. The various devices for punching, or rather drilling or boring, that have been described and represented by drawings in different bee-papers, are, in my opinion, a needless complication in their construction, and a waste of time in their operation. Any tool that will work on the boring plan must necessarily be more cumbersome and slower in its operation than the one that can do the work with a single push of the hand.

Unless we get a machine something like a corn-sheller, that will admit turning in end-bars by the crateful, and then crank them out corn-cob fashion, the handiest and speediest tool for punching is a common shoemaker's pegging awl, of rather smallish size.

If one of that kind is not at hand, don't make the mistake and use a brad-awl, for it will not work as well as the former, on account of its spread-out edge. It cannot be withdrawn as readily as a straight, dagger-shaped, pointed tool, that has no enlargement of any kind from handle to point.

The objections of our friends, that a punched hole will close up in damp weather, do not corroborate my experience, at least not to that degree that it would in any way interfere with threading the wire. I have punched end-bars in the winter and not worked them up until swarming time, but I never had any trouble in that direction.

If we use a threading machine, it is necessary (and it would be better if we don't use one) that the end-bars are punched in a uniform way. To accomplish this, I have used for years a marker, which seemed to me the simplest and quickest way of doing the work. This is one of the end-bars punched according to the number and places of wires described, and finishing nails of the right size, driven into the holes, until their points project a very little on the other side. (See Fig. 1.)

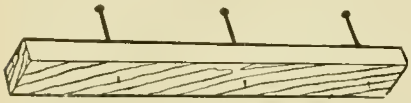


Fig. 1.

By laying the marker on the end-bar even all around, a very slight pressure will leave the impression where every hole has to be punched.

A pattern made of a piece of tin the size of the end-bars, with holes punched in their proper places, can also be made to answer the purpose, but it will not give better satisfaction than either of the plans represented by the drawings.

It will be noticed that in using the marker, every end-bar has to be handled twice, first to mark and then to punch it. To simplify the matter, I have used lately, a punching block. (See Fig. 2.) It is made of a piece of hardwood board. Two end-bars are nailed on this, one on each side, and a little block on the end between the two, forming a groove the size of the end-bar. A piece of tin, with holes punched to correspond with the holes described in the end-bars, is nailed on top, and the tool is ready for action.

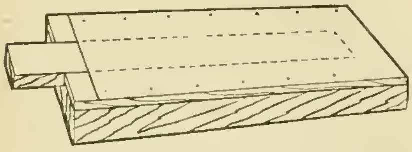


Fig. 2.

The end-bar is slipped endwise into the groove until it strikes the end-block, and the holes punched through the holes in the tin cover. This saves one handling of the end-bars, and may possibly do the work a little faster than the use of the marker, and punching afterwards.

The tin cover should not reach clear to the end of the block, but leave a little notch or entrance for the end of the bar to drop into. The drawing makes this plain. It is also an advantage to have the block fastened to the bench when in use.

In regard to the proper way of wiring frames, we do not all have the same views. I always claimed that wires should be drawn as tight as they would reasonably bear, while others, and experienced men, too, claim that tight wires have a tendency to cause foundation to bulge or buckle. I have never found it so, when using medium brood-foundation (and I would use no other), although I have always wired my frames as mentioned. The little experience I have had with light brood-foundation convinced me conclusively that it is not in the wiring that makes the difference, but that the light kind of foundation has that unpleasant notion with any wire, loose or tight. Even when no wires are used, and before it is ever put in the frames, it is inclined to get out of shape. But be this as it may, if I am all wrong on this question, I am sure of one thing: The embedding of a straight, tight wire can be done much faster than the following up of a crooked, loose one. The embedder is not so liable to leave the former as the latter.

La Salle, N. Y.

Difference in Races of Bees

BY G. M. DOOLITTLE.

A correspondent writes thus: "I wonder if Mr. Doolittle would tell us in the columns of the American Bee Journal something about the different races of bees, which he considers the best, and about their working qualities. I think this would be interesting to the majority of the readers, as I know it would be to me."

I realize that the older bee-keepers are quite apt to forget how eager they were in the beginning to know all about things which have long ago become established facts with them, and for this reason often "soar so high" that those just entering the ranks feel that they are left out in the cold because but very little of the "first principles" of things pertaining to bee-culture finds its way into our yearly periodicals of the present time.

My first experience was with the German, or what is more commonly known as the black bee, and where or when I could find anything telling about the peculiarities of these bees, I was all "eyes and ears" to learn whatever new I could of them. When the Italian bees were first introduced into this country, they were compared with the black bee, and in this comparison much was brought out that had never seen the "light of day" before, I finding out that the knowledge of these which I supposed was very nearly perfect, was, in fact, only in its infancy. The black bees had been described as very industrious, quite gentle to handle, good comb-builders, hardy to stand the winters and moderate swarmers, when their early and prolific brood-rearing was taken into consideration. And before the advent of the Italians we thought that came very near perfection. But the Italians proved that the claim of industriousness for these black bees was only comparative, for the Italians would toil all day long with only "pennies" in sight, while the blacks would not work unless there were dollars halves, quarters, or at least dimes lying around to be gathered. To illustrate this:

When I had my first Italians, I came through with 3 colonies in the spring, with something over 20 colonies of black bees. I tapped a few maple trees, and made the sap about twice as sweet as it came from the buckets by stirring sugar in it. This sweetened water was placed in outdoor feeders, and to start the bees to work, somewhat thinned honey was used. I soon had bees swarming over the feed, and they came in about the proportion of colonies I had, or about one Italian bee to seven black bees. As soon as the thinned honey was gone the black bees began to diminish, while the Italians increased, when, two hours from the time of starting there was not a black bee around the feed, but the Italians kept on working till the feeders were licked up clean.

This experiment proved it was true that the Italians would store enough for wintering, and often give a small surplus in years so poor that the black bees had to be fed to keep them from starving during the winter months. In a really good year, when nectar was abundant, there was little difference in favor of either along this line of gathering sweets.

When it came to gentleness, there was a great difference in regard to their manipulation while in their hives, the Italians keeping steadily along with their work as a rule, while the black bees would run wildly about, take wing and sting, if as little smoke was used as with the Italians; while if smoke enough to subdue them was used they would often stampede off their combs and clear out of the hive. If you held a comb up to the sun or light for a prolonged examination, tht bees would collect in little knots at the lower corners of the frame, and drop off on the ground elsewhere, thus endangering the life of the queen, should she happen to be on the frame of comb you were inspecting. This almost prohibited the finding of black queens, where the necessary amount of smoke was used to quiet (?) the bees, while without such an amount of smoke the "hunter" was almost sure to get severely punished with stings.

Now while this was true as regards handling combs and hives, yet, from years of experience, I found that with swarms hanging out on limbs and elsewhere, after clustering during swarming time, the blacks would resent being interfered with for hiving, far less than did the Italians; and as about all the handling of bees which was done before the advent of the Italians was that of hiving or handling clustered swarms, by the great mass of those having bees, this gave rise to the idea that the blacks were really a gentle race of bees.

As to comb-building qualities, there is probably no race of bees known which will give more or whiter combs than the blacks when there is a "down pour" of nectar, lasting for two or three weeks, but with a poor or intermittent flow of nectar, the Italians will go steadily on with comb-building, just as if they were sure they would gather enough honey to fill it all.

The sections I used in those days of black bees were 5¼ inches deep, and with an intermittent flow here would be an active starting of comb-building, and a stopping of the same as many as from 3 to 5 times in building a comb down to the bottom of the section. And, as every period of activity caused some of the cells to be lengthened, while at times of stopping others would be capped over much shorter, this gave the surface of the comb a "washboardy" appearance which was quite detrimental when it came to marketing the crop. At the same time the blacks were thus building combs and finishing them in the sections in this way, the Italians would build their section combs right straight down to the bottom, and cap them over as even and nicely as in one of the best of seasons. But in a really good season, there the blacks would show their superiority in this matter, for their section combs would be as straight and smooth as a board, while the cappings would stand out away from the honey, so that the face sides of these combs would be of snowy whiteness, while the darker Italians would use so little wax in capping, and plaster this right down on the honey, apparently to save wax and space, that the face sides of the combs in section honey built by them would have a watery appearance, this making it unattractive to the purchaser through its appearing like another and a darker grade of honey. However, with the golden Italians we have something which cap their honey very nearly as white as the blacks, while they have all of the good qualities of their darker sisters.

As to standing our winters, nothing need be said for either race south of 40 to 41 degrees north latitude, as any race of bees should stand the winters that far south; and in the colder parts of the United States and in southern Canada there need be little trouble where cellar-wintering is practiced. When it comes to a confinement of 3 or 4 months with the mercury down from the freezing point to 30 to 50 degrees below zero, with the bees wintering "out in the open," there is little doubt but what the black bees can exceed in hardiness their more yellow sisters. However, here in central New York, they stand our winters remarkably well, where any one is obliged to winter bees out on the summer stand. A little protection by way of double walled or chaff hives seems to carry them through equally well with the blacks.

As to the swarming of the two races, I see very little difference, though I think the black bees are much more prone to cast many after-swarms. But as nearly, if not quite all of our practical apiarists know how to control after-swarming, this counts for very little.

The main point in favor of the Italian bees, as I see it, is their pliability under the hand of good management. Of course, all their other good qualities are extremely valuable, but all of these must take a back seat for the fact that they are so pliable in the hands of the apiarist, so that the maximum number of bees can be brought on the stage of action just in the right time for the honey harvest, be that for clover, basswood, buckwheat, or fall flowers; or at the right time to secure the greatest amount of nectar from any given flow that may be one of the regular supplies for our surplus, no matter what its time of blooming may be.

I have said nothing about the Cyprians, Carnolians, Holy Lands or Syrians, Caucasians, etc., because I consider none of these, after giving all a fair trial, little if any better than the blacks, taking all things into consideration.

Borodino, N. Y.

No. 3.—Bee-Keeping in Colorado

BY R. C. AIKIN.

Should late January have a warm spell of 10 days to two weeks so that bees will fly freely and clean house, most colonies, and especially strong ones, will begin breeding. I might say that such a warm spell any time between Jan. 10 to March 1 will start breeding whenever it comes. And I consider it fortunate that we have such a spell early enough that some bees will be hatching by March 1, and surely by March 15. March and April are the trying months, and it is a very important thing to have young bees maturing, else the colony usually becomes so few in numbers that they cannot keep up breeding heat, and so succumb. Hatching bees by the last of February or early March is usually equivalent to safe wintering.

Spring management depends upon locality and general conditions; what to do will depend upon the strength of the colony and the early flora, together with temperature. Much of Colorado has foul brood to contend with, and spring is the time it does most of its spreading, by the robbing or carrying of stores from the diseased ones that have perished in winter or are unable to mature enough brood to keep up the death rate, and so become a prey to robbers. Late winter and early spring should be a time of vigilance in foul-broody locations; all dead or very weak colonies should be looked after.

SOME FACTS ABOUT FOUL BROOD NOT GENERALLY KNOWN.

I have just read in the Canadian Bee Journal of some ideas advanced on this subject at the Detroit convention, and among others Mr. McEvoy's reply to the query so often raised as to whether it is not best to boil or otherwise disinfect the hives. He convulsed the audience by asking with fine sarcasm if it would not also be wise to boil the bees! Contagion is not carried except in the honey where the bees are alone considered in its transmission, and this occurs only by carrying stores from infected colonies, *and feeding those stores to the brood where this honey is used.* Bees have been known to rob out foul colonies in early winter, when there was no breeding going on, and since the honey so gathered was used for daily rations, and all consumed before breeding began, no disease resulted to colonies getting the infected honey. It appears, then, that the principal thing to do to prevent its spread is to prevent the robbing or carrying of disease-infected stores and feeding to brood.

Regarding the use of hives and frames, I use them right along without disinfecting them, even going so far as to leave starters of the old comb in the frames, *provided there is neither any honey nor dead matter from larvae in said starter*; and also use dry clean combs from foul colonies. Neither do I burn or disinfect the hive itself, other than to scrape off propolis and all comb, and sometimes set the hive up facing the sun so it may get a good sun-scorching. With bottom-boards I am a little more careful, particularly if the colony which was over it was exceedingly foul; if the bottoms are not needed for a time, I lay them out face up and let the sun scorch them until I again visit the yard. Very often I shake colonies right back into their old hive, giving a set of new frames with starters. But I want to warn every one that once a colony is infected, even though it be with but one or two cells at the start, that colony will sooner or later succumb to the disease though it may be from 18 months to 3 years in accomplishing its ruin. I do not believe there is one colony in ten thousand that ever survives or works a self cure. So in late winter and early spring and summer, is the time of all times to spread foul brood, and this should be watched more closely then.

If colonies have plenty of stores and a queen, there can be very little done to help them until the colony has begun to get enough young bees hatching, so that more brood could be cared for. When this time has arrived, no matter what the date be, if there is nectar and pollen being carried in, there is still practically nothing to do; but if no stores or supplies are being gathered to stimulate the colony to activity and strong breeding, there is something that *can be of much help.* You can break cappings on store combs to make the workers load sacks in picking up and replacing the stores that will leak; this results in better fed queens and nurses, and more brood. The activity causes more heat, which also helps. The same thing results if the brood-chamber be lifted and turned end for end on the bottom, bringing the honey-laden ends of the combs next the entrance where the bees will uncap and carry it back. Or one or two combs may be reversed at a time and others later. These manipulations accomplish little except when field supplies are not being gathered, except that to reverse the hive or combs, putting the brood to the back causes the filling the combs from end to end, and will result in a slight increase of breeding.

LARGE HIVES BY DOUBLE STORYING.

Many Colorado localities need large hives for the best success; in fact, I am about convinced that almost any country would be better with hives larger than the 8-frame Langstroth size. I notice that the Texans are using large hives, as well as many others all over the country, and quite a number of our Colorado apiarists are coming to use a 2-story 8-frame hive. I think 12 frames, probably, would be sufficient, but a 12-frame body in one is too big and too wide, and a 6 would be too narrow, and the 8 being standard we may as well use 2 of this size in a 2-story hive. When the colony has built up and the flow is on, one may be removed and the super put on, using the removed one for a new colony or for strengthening weak ones, or for extracting.

I discovered several years ago that the double-story hive was excellent for wintering and springing, and was also fine for dividing and other manipulations, giving a control and satisfaction not to be obtained in single-story hives of any number of frames. The testimony of other users puts the double-story hive far in the lead.

For those producing extracted honey, I am sure the 2-story hive is most excellent. The combs containing the most brood can be put in one body, and those with least brood and stores in the other, the latter put at the bottom, on this an excluder, then a set of dry combs, and on top of all the one heavy in brood and stores. For comb honey the same arrangement may be made, except that the chamber put above the dry extracting combs should be put on a new stand, if the queen be left in the old location on the combs containing little brood and honey. But a plan that is more certain to control swarming, and puts the matter under absolute control, and in such condition that one may know just what will result is the following:

From the two sets of brood-combs, mass into one the combs containing most brood and honey, and put this on the old stand with super on it, leaving them queenless; the other body with the queen being set in a new location. This puts the old location queenless, but with its hive well stocked with brood, and the fielders and most of the forces of all ages there, they will build cells and are safe from swarming until the cells mature; these cells should all be cut out the 9th or 10th day, except one of the best.

Another plan that works well is to take away all the brood from the old stand except just one comb, leaving this in one of the original chambers which the colony has been occupying, putting it in the center and filling out with starters; and on this put the super, and leave here all the bees that can be spared from the other combs, making a new colony with the queen and her brood on a new stand. You now have a queenless colony with but one comb of brood on the old stand with starters only in the other frames. With full sheets of foundation (or the same and one or more bait-combs) in the super, they will build nicely in it. They will also build some fine cells on that one comb, all but one of which should be removed 9 or 10 days later. They will also build some drone-comb, but not as much as most people think; this can be removed either about the time the young queen begins laying or the next spring; the young queen will avoid laying in the drone-comb that season, except a very little amount. This plan gives one perfect control of swarming, and will give good results in honey if intelligently handled. And what is more, and a very important matter in most Colorado locations, that old queen put on the new stand and, robbed of her fielders, will get a great mass of brood in old combs and be soon a tremendous colony, and give the best of super work in the later or sweet clover flow, and usually may be trusted for very little swarming.

During the spring when manipulating, as fast as the queens are found they should be clipped; for this purpose I carry a pair of little scissors in my vest pocket. A queen found clipped, if the clipping was done the previous year, is marked on the hive record "O. Q."; but if not clipped I clip her and mark record "clpd.," with date.

The next article will detail more on some of these points.

Loveland, Colo.

* * *

Should Bee-Keepers Specialize?

BY LEO E. GATELEY.

Knowing that in all lines of endeavor the highest success has been reached only through a close concentration of purpose, and because, personally, this has been found best policy, I have always, at the risk of being deemed an inconsiderate enthusiast, urgently recommended specialty for all so situated as to be able to avail themselves of the advantages such a procedure affords.

Not unlike, perhaps, the majority of those now entering the business, I was at the time when my interest in bees became aroused, engaged in general farming. Only after the bees began making a more satisfactory showing than the other branches of my work, did the production of honey become my specialty. Considering this fact, it is hard for me to believe that I am making any monumental mistake in becoming optimistic regarding the future of apiculture as a vocation.

Though this is hardly a suitable occupation for those seeking unnaturally large and immediate financial profits, still, if intelligently followed, it will in many localities be found as remunerative as any business of similar nature. It requires, however, a steady hand and a complete knowledge of every feature of the work. Being qualified for the business, if the locality proves good, the remuneration is sure after a sufficient number of colonies have been acquired.

The number of colonies necessary to insure the bee-keeper a living income, depends upon the man, upon the methods employed, and upon the location. Though during the past season the man having 50 colonies in his back yard has realized as much as the average farmer, such years are the exception, and on account of off years, it would be safer to double that number before depending upon them wholly. Again, these figures relate to the comb-honey producers. Run for extracted, something above 100 colonies might possibly be needed.

While there is small question but that a few colonies kept as a side line usually pay well for the small amount of labor their care demands, the profits from such apiaries are extremely small, compared to what the same bees would do in the hands of an expert, and under intensive methods. In a small apiary there is never the chance to put in use many of the economic practices the extensive bee-keeper generally finds lying close at hand. Certain it is that the need for specialization has been discovered by a few, and its efficiency demonstrated.

Apiary of J. E. Klein, Indiana, Pa.

In a recent issue of one of the bee-papers, the editor speaks highly of poultry-keeping being admirably adapted as a side-issue for honey-producers. Unless raising fancy stock, the annual profit from a hen is usually estimated at about $1.00. For comparison, let us say that the labor required to care for a hen is equal to that for a colony of bees, although, in reality, it is about six times as great. At this rate, in our locality, a colony of bees kept in a log-gum, will return a profit five times that of the hen, or if in a modern hive with skillful management, the bees will hold their own if a crop is secured once in 20 years.

Few there are who have urged specialization but have pointed out the fact that a suitable location is absolutely necessary. For this reason, beginners should never start with more than a few colonies, and accurately ascertain the resources of their locality before investing largely. Even with poor management, fair returns may occasionally be had in a first-rate locality, but where there is no pasturage the highest knowledge comes to naught. Seldom does our locality furnish the enormous yields sometimes produced in a few highly favored spots, but its stability, and an immunity from bee-diseases, make it fairly suitable for specialization. During the number of years in which I have kept bees in this State a total failure of the nectar supply has been unknown.

Not all localities are adapted to exclusive bee-keeping, and where this applies, great results should never be anticipated from a small apiary kept as a side-issue; for where good returns can be had, specializations well generally be found desirable.

Complaint is frequently made that through encouraging beginners, danger may be found in some inexperienced person jumping to a hasty and erroneous conclusion that the bee-business is a broad avenue to easy fortune. No advocate of specialty has, however, to my knowledge, even remotely suggested wisdom in such policy. For the experienced bee-keeper, properly situated, the advice so often given to eliminate all entangling side-issues, is sound logic.

Without thorough preparation united with some practical experience, the one who invests heavily in bees, expecting to make of them a sole dependence, is foredoomed to almost certain disapointment. Moreover, his experience counts for little if it has been with obsolete methods.

The present-day bee-keeper has greater possibilities of living a happy and prosperous life than he ever had before. Still there remains one thing that is absolutely essential to real success, and that is some knowledge of the modern conditions that affect apiculture.

Ft. Smith, Ark.

Can Working Energy Be Stimulated in Bees By Shaking?

BY GEO. W. WILLIAMS.

It is universally recognized that the novice who is full and running over with enthusiasm, who is constantly fussing with his bees, and tearing them up, pulling them to pieces, etc., usually gets a much better yield of honey than the person does who has lost his enthusiasm, or who has such a number of colonies that he can not examine each one frequently. This is usually attributed to insufficient pasturage for the increased number of colonies.

But how are we going to account for the large honey-yields "cranks" like Dr. Miller, who is so enthusiastic that he gets up before daylight so he can pull all his colonies to pieces every few days, and can't help "digging into" each colony at least once a week? Or Mr. Alexander, who kept 750 colonies in one yard, and in the season kept the extractor going almost constantly, and thereby "shook" his bees thoroughly every few days? These men get yields, and big ones, and do it uniformly, with big apiaries, while their neighbors who keep bees in the same field, over the fence, maybe, who let their bees alone, do not get anywhere near the same yields.

I hear some one say that the reason for these large yields is the intelligent manipulations, such as spreading brood, destroying queen-cells, etc., and others that suggest themselves. Now, I do not minimize the value of these and many other necessary manipulations, but I wish to call attention to an important fact, and one that has never been discussed in the journals until I called attention to it in the December Bee-Keepers' Review, viz.:

The increased energy noticed after these manipulations, or in fact, after *any* manipulation, is to a certain extent induced by the physical excitation incident to the "shaking" the bees get during the process, rather than by any other cause. That this is true I have demonstrated to my own satisfaction, and I feel that it will be to the financial advantage of every bee-keeper to investigate the matter the coming season. As I stated in the Review, I increased my profits on the yard experimented on, 37½ percent over similar yards situated differently. In this yard I practised a system of "shaking" to stimulate them into activity whenever they failed to come up to the required standard. This is a larger percent than I expect in every case, but the fact remains that it *did* do it in one instance, and I feel sure that it will in a degree increase the yield in any case.

There are periods in a honey-flow, especially at the beginning, when every colony, provided it be strong enough, is full of intense energy. Some few colonies retain this desirable condition throughout the season, and these are the colonies that give us the big results we hear about. But in most colonies, this abates to a marked degree after a while, and the bees loaf, swarm, or otherwise fail to store the amount of honey they should.

Very few colonies, unless they get the swarming fever, allow their energy to abate very much while the yield is constantly *increasing*, but most colonies will show a marked decline after a few days of a stationary or a declining flow. To compel each colony to retain this intense initial energy to the very end of the flow has been the dream of every thoughtful bee-keeper, and, to accomplish this, many systems have been planned and many styles of hives devised.

Swarming used to be the greatest obstacle in the way of success, but "shook" swarming has, in a measure, removed the worst features of it, and incidentally suggested to me the thought of further using the "shaking" process to solve some of the other problems we have to meet.

And why not? A "shook" swarm goes to work just as energetically as a natural swarm, and, as far as we can discover, has incidentally the same desirable psychological characteristics. Anything that you can do with a natural swarm can be done with a "shook" swarm. The application is obvious when we remember that these desirable characteristics can be induced in *any* normal colony at *any* time, regardless of the presence or absence of the natural swarming desire. It naturally follows that, when for any reason whatever, we find a colony lacking energy, or *any* of the desirable psychological conditions, and we desire it to have them, we can induce these conditions, and retain them at will by using the shaking process when needed.

None of the authors in the past have given this idea any recognition as an aid in getting honey. In fact, it has never been mentioned, to my knowledge, in that connection.

In these days of low prices for honey, we must not overlook any possible means to curtail our manipulations and consequent expenses. In my experiments the past summer, I am led to believe that we can eliminate many manipulations that we have been taught are necessary, and substitute a "shaking" more or less thorough, and simplify and shorten our existing methods materially.

A test of this idea entails no expense, and all one has to do is, when going among the bees, when a colony is found that does not come up to the standard of a newly hived swarm, simply "shake" it, and results will surely follow.

Redkey, Ind.

Report for Season of 1908

BY WM. STOLLEY.

While the spring of 1907 was quite unfavorable for bees with us, and the crop the following fall a very good one, the spring of 1908 was to all appearance very favorable, and the bees built up rapidly, but the season the past fall was anything but favorable, and resulted in about one-fourth an average crop.

March and April, 1908, were warm, and we had but ½-inch of rain early in March.

May brought us injuring frost, hail, and, in all, fully 7½ inches of rain.

June was rather cold, and we had 10¼ inches rain.

July acted a little more decently, was more normal, and brought but 5 inches rain.

August was rather cool and wet again, and in this month we had 8¾ inches rain.

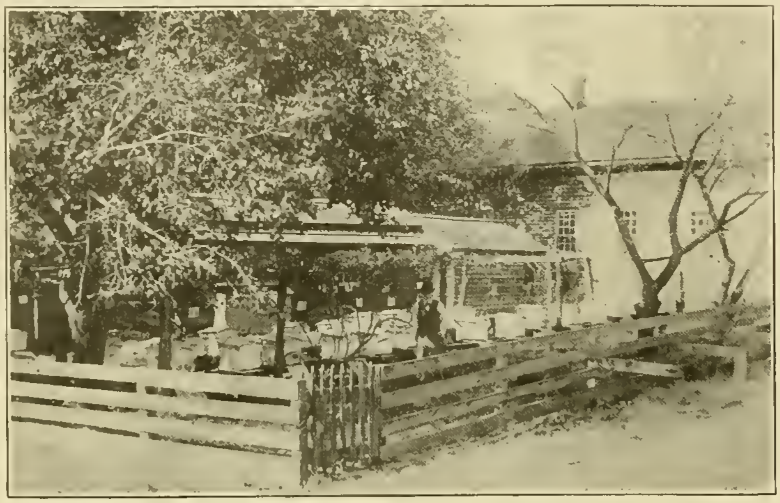
September gave us ⅝-inch rain, and October 3 inches, and on October 10 to 11 we had the first light frost.

The result of the season's work with the bees was as follows:

From 30 colonies run for extracted honey, 830 pounds; from 4 colonies run for comb honey, 20 sections—a total of 850 pounds. I had to feed 130 pounds of honey and 120 pounds of cane sugar, so as to give my bees from 30 to 40 pounds winter stores, per colony, for this winter.

October 17, I winter-packed my bees in the open shed. I had 6 swarms of my own bees, and 6 stray swarms from somewhere, which entered the decoy hives on top of my 90-foot-long bee-shed. The last of these stray swarms came on October 15. It was a *large* swarm, strung out in a long string, and it took all of 15 minutes until the tail-end had arrived at the decoy hive. This swarm proved to be without a queen.

My bees had good flights on 7 days in November and 8 days in December. On December 6 and 7 we had zero weather.



Apiary of Jacob Wagner, E. Amana, Iowa.

On December 29 I renewed the winter-packing over the bees in 25 hives. That is to say, I gave them new, heavy quilts, and had the chaff packing out in the sun, although there was but very little dampness to be noticed. I have now my exact number of colonies wintering that I had when spring opened; i. e., 30 colonies to be run for extracted, and 4 colonies for comb honey, in the coming season of 1909.

Grand Island, Nebr.

A Successful Iowa Apiary

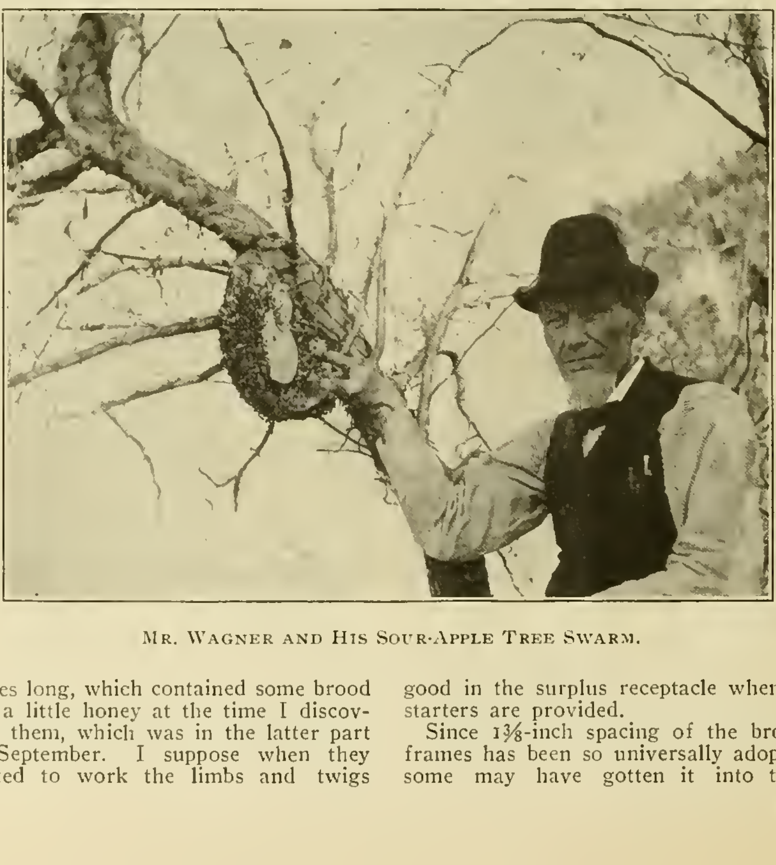
BY JACOB WAGNER.

I am sending you two photographs that were taken for me some time ago. One shows my apiary where I have been keeping my bees over 25 years. When I first started I kept them inside the building you see in the picture in the rear, but now have them outside, and use one part of the building to store away hives and other utensils when not needed. The other part I use to extract honey and do other work in connection. The larger building to the right is my shop, where 3 to 4 men are working on benches doing cabinet and carpenter work.

I have found it more practical to keep bees outdoors than inside. I have them under an arbor of grapevines, which I consider an ideal place for them. You can notice the sidewalk and street just outside the fence. This is one of the most used thoroughfares at the place, and in all these years, nobobdy has ever been bothered by my Italians, which fact surely shows that they are a rather good-natured crowd. Some seasons I have 50 to 60 colonies on the place, but this season had only 15 colonies, spring count, which increased to 26 and produced over 3000 pounds of extracted honey, and 320 pounds in one-pound sections, so I have reason to be well satisfied.

The other photograph shows a swarm of bees that I found in the limbs of a sour-apple tree, 8 to 10 feet above the ground. They were hybrids and very gentle, and did not bother me in the least while climbing to my seat where the limbs formed a fork just about 4 feet from the cluster, with my face as close as 2 feet to them, and my hand still closer. Through failure to find a better place, and for some other reason, they selected this rather odd place for their permanent home. They had built 6 combs, 10 inches wide, and 14 to 16 inches long, which contained some brood and a little honey at the time I discovered them, which was in the latter part of September. I suppose when they started to work the limbs and twigs were very thick with leaves, thus forming a covering or natural roof, that must have looked inviting to them. Well, I thought it an uncommon sight, anyway, so I decided right there to have it photographed, hoping it might find a corner in the American Bee Journal in the interest of its readers.

East Amana, Iowa, Nov. 3.



Mr. Wagner and His Sour-Apple Tree Swarm.

"Thick Extracting Combs"

BY E. D. TOWNSEND.

On page 181 of the American Bee Journal for June, 1908, under the above heading, is an extract from the British Bee Journal, referring to the spacing of extracting combs 1¾ inches from center to center, Mr. Richard M. Lamb saying "he bought 100 wide frames, and for a few seasons compared the work done in them with that done in the ordinary frame with the 1½-inch spacing, and found the former sadly disappointing."

While there is usually a wrong as well as a right way of doing things, I cannot see from the quotation above referred to, where Mr. Lamb made his failure. It will be noticed that 1½-inch spacing from center to center of his extracting combs is a success, 1¾-inch spacing a failure as to quantity and quality of honey produced—only a fourth of an inch difference in spacing, between success and failure.

It is admitable that 1½ inches, from center to center, is nature's width of spacing; that is, if a swarm is hived in a box, without any guide in the shape of a starter, their worker-comb will be built about 1½ inches from center to center, and this width spacing will hold good in the surplus receptacle when no starters are provided.

Since 1⅜-inch spacing of the brood-frames has been so universally adopted, some may have gotten it into their heads that that is nature's width of spacing, and that 1¾-inch spacing is ⅜-inch wider than nature's way. This is a mistake. This 1⅜-inch spacing is made possible by the use of very straight combs, the result of the use of foundation, or the intervention of man. Where combs are built almost as even and true as a plained board it was found possible with these true combs to crowd nature's spacing 1-16 inch, thus making the spacing only 1⅜ inches from center to center of the brood-combs.

The upper stories in which we produce our extracted honey, are 14¼ inches wide, inside, or what is known as the 10-frame width. Eight frames in these stories is a little less than 1¾-inch spacing from center to center, 9 frames in these stories a little less than 1 9-16-inches spacing, allowing for one more bee-space than frames in each story.

Mr. Lamb does not quite say that the colony provided with 9 combs will store a half more surplus extracted honey, than one with 8 combs in their extracting story, but he *does* say that the colony with 1½-inch spacing of combs in their upper stories will store a *half more* honey than one with 1¾-inch or 2-inch spacing. As I know of no one using a 2-inch spacing, and likely there are but few who space their combs for extracting as close as 1⅜ inches, I will consider only the 1½ and 1¾ spacing, in what I have to say on this subject.

We have (self and sons) at the different yards 1,000 upper stories. When we commenced buying frames for these stories, we bought what is known as the staple-spaced frame, but used only end staples. These frames were built of ⅞-inch wide material for the bottom and ends; the top-bar was 1 1-16-inches wide. When one of the projections at the end of the top-bar would split off, as they occasionally do, on being removed to be replaced with a new top-bar, we were surprised to find how thick the comb was next to the top-bar.

In uncapping to extract, the cappings are cut down even with the top and bottom bars of the frame, that is, the knife is held up against the frame as close as it is practical; the cutting over the 1 1-16-inch wide top-bar, would leave the comb more than 1⅛ inches thick at the top, and many of them would be 1 3-16 inches at the top, gradually tapering down to about an inch thick at the bottom of the comb.

We had in previous seasons produced a large amount of comb honey, and had used the part-full sections of the previous season, a few in each super—"bait-sections" as they are called. Many of the combs in these sections were built out to their full thickness, only needing capping to be ready for the market. As the season closed, and left them part capped over, they were extracted and used for bait-sections, as I have explained before. These bait-sections were drawn out into *thick* combs *when given to the bees*, and never produced honey equal to those drawn out from foundation, and filled with honey as they were drawn out. The upper half, at least, of the extracting combs heretofore mentioned, where the uncapping knife was run over the 1 1-16-inch wide top bar of the frame, were identical with the bait-sections, mentioned above, i. e., too thick to produce a good article of honey, either comb or extracted.

Can it be that Mr. Lamb made the mistake of using wide spacing, and *did not uncap deep?* The quality of the honey he reports, looks that way.

The remedy is simple: it is not wide or narrow spacing, that determines the quality of the honey produced; it is the *thickness* of the empty extracting combs, *when given to the bees,* that has much to do with the quality of the honey produced. Space your extracting combs to suit your own fancy, then see to it that they are not to exceed *one inch thick* when given to the bees to be filled; and other conditions being favorable, the quality of one's honey will be all right.

After knowing this, is it any wonder that I now build all our extracting frames only ⅞ of an inch thick: so by holding the uncapping knife reasonably close to the frame when uncapping, the comb is cut down to about an inch thick. At the time of adopting the 1 1-16-inch wide top-bar for our extracting frames, we spaced our combs the same as we had been accustomed to do for the previous 20 years, that is, a little more than 1½ inches from center to center, or 9 combs in the 10-frame body. With this spacing we had trouble in uncapping a *thin* comb, in a *wide* frame; that is, if we run the uncapping knife as near the top and bottom bar of the frame as we could conveniently in uncapping, much of the surface would not be uncapped, necessitating going over the surface of the comb a second time to pick up that portion not uncapped the first time over. This second going over the comb to finish the job, would take more time than it would take to have cut the whole side of the capping off in one slice, providing the comb had been bulged out thick, instead of the lean comb it was. To remedy this defect in the wide top frame, 8 combs were used instead of 9 as before, in the 10-frame body. This 1¾-inch spacing gave the bees a chance to draw out the combs so fat and thick that there was no trouble in uncapping. About one-half of our stories are worked this way at the present time; but a special effort is made to uncap these combs as near the inch mark in thickness as is possible.

In getting our foundation drawn out for extracting combs, 9 frames are used in our 10-frame upper stories. This is nature's width of spacing, and we think a little better work is done with this spacing than with 1¾ inches; that is, the surface of the combs when finished is much more even with narrow, than with wide spacing. It sometimes happens that combs are built up between the sheets of foundation from the hive below, when spaced 1¾ inches apart. There is nothing gained by using 10 frames or 1⅜-inch spacing in getting foundation drawn out for extracting combs, as the bees work the 1½-inch spacing just as well, and when done the combs are finished, or fat enough so the uncapping knife will do the work, provided the frame that contains the comb is but ⅞-inch wide, so the comb can be cut down to an inch (or there-about) thick, as explained above.

A year ago a few of these ⅞-inch wide frames of comb were used 9 to the 10-frame story: they uncap just as well as when 8 of the 1 1-16-inch wide top-bar frame is used, in the same story; or in other words one is about as fat as the other, so in either case the whole side of the comb can be uncapped with one stroke of the knife. Last summer about 100 stories were used with 9 combs, as above, with perfect satisfaction, and the indications are now that all of our ⅞-inch wide frames would be worked 9 to the story in the future. It is just as likely that our 1 1-16-inch wide top-bar frames would be worked as usual, 8 to the story; for, as I have said before, it is a tedious job to uncap a lean comb, between *wide* frame bars.

Those, like Mr. Lamb, who think it wasteful to uncap deep, should by all means space 1½ inches from center to center, for by so doing the combs will be the desirable thickness when through uncapping; and not be so thick when given back to the bees that nothing but inferior extracted honey will be secured.

Before going further I want to emphasize the fact that if one adopts this wide spacing of his extracting combs, it is absolutely necessary that he follow the system clear through, that is, cut the combs down to about an inch thick when uncapping; by so doing just as good honey will be produced as with any width of spacing; but, on the other hand, if the combs are left thick, only just enough cappings cut off barely to uncap the honey, the results will not be satisfactory. Be sure to adopt the whole system, or narrow spacing will give better results.

Mr. Lamb says it is wasteful to uncap deep. If this is the case, it seems as though we should have been the first to have found it out, working the 1½-inch spacing of our extracting combs as we have for more than a score of years, then gradually changing to the 1¾-inch spacing until hundreds of stories were worked with this spacing for the last 10 years; then 2 years with both 1½ and 1¾ spacing in the same yard: had there been any difference in amount of surplus honey secured, it seems to me that we would have been in position to have known of this difference, which I assure you we have not seen.

I have no "ax to grind" in this controversy, only a desire to produce the most extracted honey of a superior quality at a minimum of cost. If one feels that it is wasteful to uncap deep, he will be quite likely to run his uncapping knife shallow, and by so doing leaving his combs too thick to be returned to the bees for best results. To those feeling that way, unless they see the error of their way and uncap properly, I would recommend 1½-inch spacing, for quality's sake.

I think all will agree that combs with narrow spacing will be capped over just a little more expeditiously than with wide spacing, but we here in America have lots of time after the close of the season for the bees to finish up the curing and capping of their honey, before it is necessary to extract.

No difference is noticed whether 8, 9 or 10 frames are used in the 10-frame story, as to swarming, the bees entering the stories readily.

In conclusion I would say that if the frame the extracting comb is built in is ⅞-inch wide, no trouble will be experienced in uncapping the comb in one full sheet; or, in other words, if frames are spaced 1½ inches from center to center, the combs will be bulged enough so there will be no trouble in cutting off the entire capping from one side of the comb at one stroke of the knife. Ten combs in this space are too lean to uncap to a good advantage, even with ⅞-inch wide frames. With a frame ⅞ wide for our extracting combs, either 1½ or 1¾ spacing can be used to good advantage; with 1 1-16-inch wide top-bar extracting frame, 1¾-inch spacing is closest that will uncap to good advantage.

Remus, Mich.

Pollen Starvation Cause of Foul Brood

BY W. H. MESSENGER.

The June American Bee-Keeper says: "Gleanings has repeatedly declined to give space to Mr. Huxley's new ideas, apparently because they are so radically at variance with accepted teachings." In the same issue is this: "Dr. White of the United States Bureau of Entomology, Washington, for the same reason, declines to conduct experiments along lines suggested by Mr. Huxley, although he admits that the latter's theories may be correct, and that if they may be proven so it will be quite an advance in scientific research."

Mr. Huxley's letter is on the origin of foul brood, and puts it down to insufficient pollen (pollen starvation) from the third or fourth day of the larva. Not such a terrible dogma surely for people to fight shy of, who earnestly wish to get the mastery of foul brood.

Now I have all the text-books published in this country, subscribe for all its journals, and send to Washington for every bulletin published to do with bees and kindred subjects, and I learn the same from all. They teach you how to distinguish it when you get it, and also how to cure it. (And by the way, a person that has learned by the study of chemistry or photography what a *clean* vessel is, and how to obtain it, will stand more show of making a thorough cure without destroying property than one who has not learned what "clean" means to a chemist.) When it comes to the question of how you got foul brood, in the first place, they one and all look for some outside source of contamination—by introducing queens in the original mailing-cages, by feeding bought honey, or by robber-bees. Never have I read, outside of Mr. Huxley's letter, that it can be manufactured, as it were, right in the apiary. I have been of that opinion myself for a year, but not being a scientist I could not write on the subject. Besides, I have no knowledge except from the aforesaid literature, and my own observations in my *own* hives while building up a 1-frame nucleus to 20 colonies in 3 years. Those observations have convinced me that if I am not careful I will have foul brood, and it will have originated right in my own apiary. The facts are these:

In the fall of 1906 I went into winter quarters with 3 weakish colonies. In the spring of 1907 I found one with a drone-laying queen. The old queen had been superseded late, as I clip, and she was not clipped. I sent for a queen and took all the frames with drone-brood away. Later I used those frames, putting them in with dead capped drones in worker-cells, though several weeks after. These combs were used in the 3 original colonies, the increase building new combs and several times through the year there were scattering cells of dead brood in those 3 colonies, the brood turning yellow before dragged out.

They went into winter quarters reasonably strong (outdoor wintering in double-walled, cork-packed hives), and from each of those 3 colonies I would scrape out weekly about a half cupful of dead bees, while from the other 6 about a score. The past spring they were terribly weak, dead brood scattered all over, and some yellow, some jet black, and some dried down to a scale at the bottom of the cell, and some perforated cappings. Everything according to illustrations and description—foul brood—except that there was no odor (and I certainly know the smell of glue), and not the slightest ropiness in any I tried, and I tried hundreds. I changed them with very strong colonies, and as I number the same as Dr. Miller, I charged back in 3 weeks. There was great improvement, but not perfect, so I requeened. But there has been more or less trouble right along until the fall flow set in, which is practically the only flow here for surplus. I have all frames marked where any brood has died, for further observations next year.

My opinion is that let brood die in a weak colony from any cause, whether pollen-starved or otherwise starved, chilled, or any other way, and that brood stays in the cells till rotten, subsequent brood is likely to be contaminated, and with continued neglect, bad weather, etc., will eventually turn into mild and then virulent foul brood. Of course, being only a novice, I am not entitled to propound a theory, and my opinion is not worth much, but if correct and we all knew it, how easy it would be to keep our apiaries clean. I for one in the future will cut comb containing patches of dead brood before I give the frame to the bees.

The reason for this letter at this time is that the National Convention will discuss this side of the foul brood question. It is a sure thing that we have to know more about it than we know at present. We seem to be about at the end of the beaten track, so we must try a new path, and if after all the fanfare of trumpets this coming convention has had, nothing more is dished up than a paper after the style of the one lately read by F. R. Davenport at a meeting of the Texas Bee-Keepers' Association, I think Dr. Bohrer in the September American Bee Journal hits the nail on the head exactly.

Port Richmond, N. Y.

Introducing Queens — Classification of Queens

BY EDWIN BEVINS.

I have been killing old queens and introducing young ones for quite a while, and am not done yet (September 19). I have bought all queens but one from queen-breeders here and there. I had one swarm this season, September 3—the only swarm from 100 colonies. I expected to get some queen-cells to give to other colonies, but before I got them ready some young queen in the swarming colony got around and stung all cells but one. I put the frame with this in a queenless colony, and have one new queen reared in the yard. By the way, I have a sort of liking for young queens reared in the yard. The bees of some reared in the yard last season have beaten everything in the yard this season. I bought and introduced quite a number of queens a year ago. Some have proved to be good, some bad, and some halfway between. I have just killed 3 out of 4 purchased of one man last fall. A select untested queen from Ohio, costing me $1.25, has proven nearly worthless for comb honey production, or perhaps it would be better to say her bees have so proven. I will try her next season for extracted honey.

It has been my practice ever since I began to be interested in bees (some 15 years ago) to buy of queen-breeders a few queens every year. I have bought some from the most noted breeders and many from breeders of less repute. With very few exceptions the queens have been what I might reasonably expect for the money paid. There is in the yard the blood of queens from nearly half of the States of the Union, and be it a consequence or not, my bees are hustlers when there is anything to hustle for.

I am trying this season to introduce queens by the Abbott plan. I receive a queen by mail, then I put an empty comb-honey super or a rim about 2 inches on the hive, and lay the cage, wire-cloth down, on top of the brood-frames without removing the cork. Leave it so for about 24 hours. Then prepare an empty hive with excluder-zinc before the entrance, then set the hive with doomed queen off its stand and put an empty hive in its place. Then I shake the bees from the combs in front of the empty hive, and put the combs in the hive in the same order as found in the old hive. This way of finding queens is a necessity with me, as my eyesight is now so poor that it is nearly impossible to distinguish the queen from any other bee. Even with this method, if the sun is not shining brightly on the front of the hive, I have to get some other person to find and kill the queen. Some readers may say or think I had better get out of the business, but I won't just yet. Mind and hand run that way, and both must have something to do.

With this digression, I will proceed to say that I do not know how successful I shall be with my efforts to introduce in the way indicated, but I am not expecting many failures. I will say further, regarding the method, that as soon as the combs are all in the new hive I lay the cage back on top of the frames and put on the super and cover as before, and do not remove the cork from the candy till the bees have had a few hours in which to realize their queenlessness.

Looking into one hive a few days ago, I found the cage empty and quite a good-sized ball of bees on the frames in front of the cage. This did not give me much concern as I had had a similar experience before.

A year ago I attempted to introduce 3 queens by the method I have been describing. The work was done by another, but I got out in time to note results. One colony proved later to be queenless. On the frames of another colony I found a large ball of bees, and on smoking the bees enough to make them disperse I found they had had a queen in their midst. Afterward I saw her on the combs apparently uninjured. Her colony is a large one now. I have had very good success in introducing queens so late in the fall that there would be no brood in the hive, sealed or unsealed. The danger is that there may be a little unsealed brood and eggs that escape observation. Those having extracting hives or supers above excluders, have an almost certain means of getting queens safely introduced: Take off the hive or super when there is a goodly number of bees in it and set it down on a flat bottom-board, put some thin wedges under 2 corners of the hive and leave the bees confined for about 48 hours. Then put the cage with the queen on top of the frames with the cork removed, and the bees proceed at once to release her, being hungry for a queen. I like this as well as the nucleus-box plan, and it is a little less trouble. The bees and queen can be united with any colony you see fit to make queenless if you use well-known precautions.

I have just now introduced a valuable queen in this way and united with a colony that has bees and stores enough for safe wintering. I will modify this a little by saying that I killed the queen of an 8-frame colony, then set the frames over into a 10-frame hive before uniting, as the colony with queen was in a 10-frame hive. A few days after the union I found brood in 2 combs in the lower hive, and as the upper one had but 8 there was just room for these 2 combs in it. After putting brood in the center I took away the lower hive, putting the upper one in its place, then set the lower hive 8 or 10 feet in front of the old stand, closed so that only a few bees could get in or out at once, and the bees soon carried what honey was in it—somewhere. I reckon most of it went into the hive on the old stand.

I do not now use many hives of the 8-frame dovetailed size for rearing brood at the season of the year when brood is being reared to make workers for the harvest. Having a good supply of hives holding 9, 10, and 11 frames, I use a good many of these in the spring. My practice is to set the combs of the 8-frame hives into the larger hives in the fall, and fill up with combs of sealed honey if I have them, and, if not, with frames of drawn comb, and then feed sugar syrup till I get the hives of the desired weight. Then when the honey harvest comes I leave the strongest colonies in the large hives and return the weaker ones to the 8-frame hives. As I use largely of drawn combs when hiving swarms, if the swarm is not unusually large, I hive it in an 8-frame hive, and sometimes contract by means of dummies to 6 frames when working for comb honey. Sections are filled rapidly by not very strong colonies when thus contracted. But these contracted brood-chambers must be seen to later.

If I were to begin bee-keeping again, and my choice of hives were confined to the hives now in general use, I think I should begin with the 10-frame Langstroth hive. It is easy to make an 8 or 9-frame hive out of it if desired, and then have it a 10-frame hive for winter. It is a good hive for both comb and extracted honey. I will here say what I should have said before, that an 8-frame hive put on top of another 8-frame hive for enlargement of the brood-chamber is an awkward makeshift for a hive wide enough to take all of the combs needed for the most prolific queens. There is more enlargement at one time than is generally needed, and two hive-bodies of standard depth are not desirable for wintering.

If I were to work altogether for extracted honey I feel pretty sure that I should use the Dadant hive, or a slight modification of it. I have used some of them for many years, and know of nothing better for the lazy man and the man busied with other things. Just think how a queen must have to hump herself to fill 10 or 11 Quinby frames with brood. She so seldom thinks of going up into the super that it is not worth while to use excluders. All one has to do is to put on supers, and the bees do the rest all season, and seldom think about swarming. If it had not been for the fact that extracted honey got a black eye some years ago, I would have more of these hives today. I predict for them a big future.

Many of the hives in use require more manipulation than the profits of the business justify or ever will justify. What wonders the Aspinwall non-swarming hive will work in the industry I do not know, and never shall know, as it is so near "sundown" for me. The Dadant hive is almost a non-swarmer. The man who expects success with them must give heed to the kind of queens he uses. Queens of just ordinary prolificness will not do.

I was so interested in the 10-frame divisible brood-chamber hive described by Mr. Scholl last year in a letter to Harry Lathrup, that I went to work and made a few, intending to try some of them this season, but the season has been such a poor one that I got nothing done except a few combs built in 2 or 3 sections.

Perhaps I ought to have said before that the nucleus-box is a good thing when bees above excluders are not available; and perhaps I ought to have said that when setting combs from 9, 10 and 11 frame hives over into 8-frame hives at the beginning of the honey-flow, I put the combs with most brood into 8-frame hives, and if there is an excess I give them to colonies that need strengthening, or else make nuclei. And perhaps I ought to have said that the reason why I use the Abbott plan for introducing queens is because that is the lazy man's way, and because I think the failures will not be enough to hurt much.

A safe way to introduce queens is: Buy a nucleus of one or more frames with queen, and let the other fellow take all the risk.

The practice of some queen-breeders to classify queens as untested, select untested, tested, and select tested, never struck me as being an altogether fair way of doing business. An untested queen is an untested queen, and who is to say with any degree of positiveness that one is better than another? It may be a little different with tested queens, but it seems to me that the man who buys a tested queen is entitled to as good a one as there is below the breeding class. If some buyers have to take the culls, other buyers should get as good as there are in the class they buy from. I will not go so far as to advise bee-keepers to boycott the breeders who make these distinctions, but I have felt all along, since they began to be made, that somebody was not getting a square deal.

Leon, Iowa.

Swarm-Control and Preparing for the Honey-Flow

BY CHAS. TROUT.

It is an established fact that to produce the greatest amount of honey we must control the tendency of the honey-bee to swarm. Especially is this so with the producer of comb honey.

For several years I have tried numerous methods and have arrived at the following conclusions, namely that there are three main reasons why bees swarm. These are a desire for more room; hereditary instinct; poor ventilation and communication of hives and supers. If this theory is correct, then our problem is to eliminate these faults. To do this we must provide hives and bees which are free of these conditions.

The hive I use is a 10-frame one of Langstroth dimensions. Ventilation is supplied through the supers by a ⅞-inch hole bored in one end of each super, and covered with wire netting on the inside. The super is placed on the hive so that the hole in the super comes directly over the entrance. It must never face the rear of the hive, as that causes a draft over the brood. As extracting supers have free communication we have only the comb honey super to deal with. Comb honey supers which have plain sections and fences already, have this, but not so with the bee-way supers. To supply this to those supers, use a separator which has holes ⅞-inch in diameter bored through them so that the hole comes in the center of the section. This will supply, to a limited extent, the desired communication.

Now to produce a strain of bees which lack the tendency to swarm; here we must deal with the queen, as she is the origin of the future colony. We can do this by continued efforts at queen-rearing. In the fall of each year I grade all my colonies. The colony which ranks first in honey-production, lesser desire to swarm, and gentleness, is chosen for the origin of the queens. The colonies ranking next I use to rear a limited number of drones, according to the number of colonies in the apiary.

About 8 or 9 weeks before the main honey-flow in the spring, I start queen and drone rearing. If it is necessary the colonies are stimulated with combs of sealed honey.

My queens are reared in strong colonies above excluders, from select larvæ. When the cells are sealed they are placed in a nursery cage similar to that used by the A. I. Root Co. When the virgins are about ready to hatch, I go through the apiary, giving combs of sealed honey wherever needed, and placing the queen above the excluder. Upon the virgins hatching they are allowed to run in at the entrances of the hives. This is about 5 weeks before the honey-flow.

About a week before the flow starts I go through the apiary, adding supers, removing the brood from the brood-chamber to the supers, and replacing with foundation or empty, dry combs, according as the colony is to produce comb or extracted honey. The old queens are removed, being killed or used for increase.

Now each colony has a young queen that will be less likely to swarm than an older one. All colonies are strong, having the old queen, and, for nearly 3 weeks, 2 queens to build them up. They have plenty of room, and are ready for the honey-flow. Those colonies which are going to produce comb honey have a brood-chamber of foundation, an extracting-super of brood, with a section super between it and the hive proper. The colonies producing extracted honey have 2 supers of brood.

When the honey-flow starts, those colonies which produce comb honey, having been compelled to pass through the section super by the super of brood above, readily enter it and start work upon that super being removed. This is done by placing a bee-escape between the 2 supers when the brood is found sealed. Then the hatching bees go below and empty the super.

From 54 colonies run for comb honey I removed an average of 150 pounds of fancy comb honey. There were no swarms, and the season was very poor.

I have practised this system only the last season, and therefore I am not sure of it. But from all my experimental apiaries, good results were obtained.

These are the chief advantages of this method: We have very strong colonies with young queens. Each colony has been requeened from select stock without a day lost of the laying queen. We have a chance to test our origin. Then, at an opportune time, we have 2 queens laying. Also, I have a theory that a young virgin queen will lend to the colony part of that vigor.

Now in conclusion let me say that this method is still in the experimental stage. Last season it proved a success in my experimental apiaries, but still it isn't a sure success until it has been tried under various circumstances. If you will give this lots of thought you will readily see many reasons, which I have not mentioned, why it should become, under the right management, a success.

Redlands, Calif.

Something About Bumble-Bees

On page 55, "New York" asks, "What becomes of bumble-bees when cold weather comes on?" We have had several responses to this question, the following being from Dr. Mahin, of Indiana, who has this to say about

What Becomes of Bumble-Bees in the Fall?

I think I can answer the question satisfactorily, as I have had some opportunity to observe the habits and natural history of that interesting and useful member of the insect world. Some years ago I had a nest of bumble-bees under observation a whole season. In my back lot, among the apple-trees, I discovered a large queen or mother bumble-bee making her nest in a bunch of dead grass. I got a box that had been used for a cap on an old box-hive, having a hole in one side of it, and this I placed over the nest for its protection, and carefully observed the development of the infant colony. The mother-bee gathered a ball of pollen-mixed honey, the ball being about the size of a large hazel-nut, and laid an egg in it. That done, she proceeded to form another ball, and so on until she had quite a cluster. When the eggs hatched the larvæ fed on the pollen and honey until they were fully developed as larvæ, when they spun their cocoons and in due time emerged as full-grown bumble-bees.

But these bumble-bees were *workers*. They were not much more than half the size of their mother, and were, like the worker-bees in our hives, imperfectly developed and barren females. As soon as they were old enough they began to make balls of honey and pollen, and then the population of the colony increased more rapidly, and the mother-bee probably ceased entirely to gather pollen and honey, leaving that work to her children.

Later in the season larger balls were made, and the eggs laid in these developed into perfect females, or queens, and into drones about the size of the queens—a little longer perhaps, a little more slender, and somewhat lighter in color. But a practised eye will readily distinguish them. Like the drones of the honey-bee, they are stingless.

As with the honey-bees, the mating of the queens and drones takes place away from the nest. I used to see drones sitting on the outside of my bumble-bee hive watching for the young queens to come out, and as soon as a queen would come out and take wing a drone would give chase. But I could never witness the mating.

The drone bumble-bee is not helpless like his cousin of the bee-hive, for he can help himself to the nectar of the flowers as easily as his sisters do. As the cold weather comes on, and the frost kills the latest and hardiest of the flowers, the drones and workers of the nest perish, nearly but not quite all dying away from the nest. The perfect and fecundated females seek the most secluded and protected places they can find, and hibernate until the warm sunshine of the spring awakes them from their winter's nap, and at the same time brings out the earliest flowers to furnish them sustenance. Of course, very many of the fecundated females perish during the winter. (Rev.) M. Mahin, D.D.

New Castle, Ind.

Mr. Isaac F. Tillinghast, of Factoryville, Pa., kindly sent us a clipping taken from Colman's Rural World, of February 12, 1908, which tells how and where the bumble-bees pass the winter. It reads as follows:

Bumble-Bees in Winter.

The following bit of natural history written by Col. Isaac W. Brown, the famous "bird and bee man," appeared in a recent number of the Bible Record:

I have been very much interested this summer in noting that at all the Chautauqua schools great interest in nature study has been manifest. Many lecturers have given the stinged insects much credit for the work they do in making life better and easier for the human race. The lecturers easily proved that the bumble-bee was that friend, but did not have time to speak of the home life of that bee.

I write this little story therefore, with the thought that many people beginning to realize that creature's vast importance in the economy of nature (the thoughts of God) will desire to have his presence and aid. Many a colony of bumble-bees has been burned in its home by people who had no idea they were destroying their friends. There are not one-tenth as many bumble-bees in the agricultural districts as there were in boyhood days. More is the pity, for 25 years from now colonies of bumble-bees will be valued at from $25 to $50 each in agricultural districts.

The female bumble lives from 2 to 5 years, and has her stinger to protect her in fighting life's battles. The male has no stinger, because he has no battles to fight. He is born in June, lives a luxurious life among the flowers until frost time. He is then "married," and always goes from his wedding trip to his grave. His widow goes into a dormant condition, usually one or 2 inches below the family home, and so remains until the following spring. The usual number of female bees so hibernating in a home is about 10 to 17. Her hope is that she may have sufficient strength in the spring to reach the little cups of stored honey above her head, and feasting thereon for 2 or 3 days, go out into the world and make a new home for herself and her children to be.

The time will come when those homes

will be provided during the winter-time and placed in proper position for the widow's use.

We are now using old felt hats torn into shreds, and other soft material, for filling bumble-bee boxes. We use that kind of material for the reason that the bumble-bee first makes but one cell and likes to make that surrounded by very soft material, so that as she makes the other cells she may easily make room in her nest. The boxes are made 8 inches high and one foot square out of old, well-worn lumber. The entrance holes are made one-fourth of an inch in diameter—large enough for the bees, but too small for other animals. The boxes are just put carelessly along the fences of clover fields and orchards.

New Comb Honey Grading Rules of the Colorado Association

No. 1 White.

Sections to be well filled and evenly capped, except the outside row, next to the wood, honey white or slightly amber, comb and cappings white and not projecting beyond the wood, wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 1 Light Amber.

Sections to be well filled and evenly capped, except the outside row, next to the wood, honey white or light amber; comb and cappings from white to off color, but not dark. Comb not projecting beyond the wood, wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

No. 2.

Includes all white honey and amber honey not included in the above grades. Sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned. No section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

Removing and Handling Filled Supers.

Comb honey should be taken off as soon as completely capped, no more smoke than necessary should be used, and the smoker kept well filled with fuel so no ashes will blow out and spot the cappings. If finished supers are stored in the honey-house, one or several sheets of newspaper should be used between supers, to catch any possible drip, and keep out dust and ants.

Cases should be well nailed with cement-coated nails and glasses perfectly clean. If edges of covers and bottoms project they should be planed off; if this is not done many boards will split in shipping. The whitest, smoothest boards should be reserved for the covers, and the others used for bottoms. The paper tray in the bottom should be evenly folded, and drip-sticks secured in their proper places by the use of a little glue or thick honey on their under side. Nail cover on firmly when case is filled.

The mark of the grade of honey should be put into *both handholes* of the case; *X stands for No. 1 white; one dash for No. 1 light amber, two dashes for No. 2.* The marking of filled cases should be done before they go to the storage pile.

Second-hand cases should be used only for the casing of cull honey, never for the shipping grades.

Cleaning and Casing Honey.

This work must be done in a well lighted place, and a large bench or table provided for it. The shipping-cases to receive the honey should be placed so as to face the packer, and should be arranged so no propolis from scraping will fly into them. It is desirable to have several cases for each grade on the bench, so that honey of the same shade and finish may go in the same case. A definite place should always be used for each grade to avoid errors in casing.

An accurate spring scale should be handy to weigh doubtful sections.

The practise of piling honey on the bench before casing is not recommended, as honey is more subject to injury, and time is lost in casing. It is desirable that the packer should have a copy of the grading rules hung up before him for ready reference, and where this work is entrusted to others, the apiarist should provide specimen sections representing the poorest of each respective grade, and give strict orders that anything inferior to these samples must go into the next grade below.

The face of each case should be of uniform color and finish and truly represent the contents of the case.

Cull Honey is Composed of the Following.

Honey in badly stained sections, caused by leaky covers.

Honey that shows signs of granulation.

Sections that are leaking or where the cappings are injured.

Sections that are fairly well capped, but have more than 25 open cells.

Sections that are capped, but weigh less than 12 ounces.

All cull honey should be marketed around home, or rendered.

Hauling of Comb Honey.

The proper time to haul and ship comb honey, is while the weather is still warm, therefore no time should be lost in getting the crop ready. In hauling by wagon, it is desirable to provide springs for the wagon-bed, and if these cannot be had, a layer of three or four inches of straw should be used in the wagon, on top of this should be spread a canvas or large wagon cover in such a way that after the wagon is fully loaded the canvas will fold over the top of the load, thoroughly protecting the honey from dust or a possible shower.

The bed of a regular farm wagon will take 96 cases of honey. A good, steady team and careful driver are required to haul comb honey safely.

Honey-Vinegar as Food vs. the Other Kind

BY C. W. DAYTON.

Honey sealed up in air-tight cans, or in open receptacles, loses a part of its substance by the changes which are wrought by expansion and contraction. The waste is carbon dioxide, as for its method of change, and the final product is carbonic acid gas. The carbonic acid which is expelled from the lungs is carbon dioxide, until it has been resupplied with oxygen from the air. Then it becomes acid gas, the same as acetic acid vinegar is carbonic acid liquid. One is as nutritious as the other.

The oxygen of the air is unorganized and inefficient in electrical magnetism. The cause of nearly all diseases is that the system appropriates more of the unorganized oxygen of the atmosphere than of the organized oxygen of nutritive foods. Food lacks nutrition because it has been divested of its electrical magnetism during the process of manufacture, or when not manufactured they may have been grown on soils in conditions where they utilized too great a proportion of carbon and nitrogenous elements.

The purpose of organized oxygen is for the transportation of electro-magnetism, an invisible and imponderable substance, but the most important of all substances. The unorganized, atmospheric oxygen which we take into our lungs is as much a foreign substance as is a sliver of poisonous wood in a finger. If it did not possess affinity for carbon dioxide it would never remove it from the system. As the unorganized oxygen courses through the lungs and arteries it comes into contact with organized oxygen elements which endeavor to expel it from the system. An over-amount of deep respirations is as injurious as the lack of respiratory activity. It fills the blood with unorganized oxygen so that when there is much unorganized oxygen in the food the amount is rendered excessive. We live by a balance. When we become far unbalanced death ensues. The purpose of the 5 senses is for the determination and maintenance of this balance.

When the system becomes balanced—near perfect health—that is, if the impurities are removed from the system as rapidly as they are produced—now if that person undertakes to drink a glass of beer or food containing acetic acid vinegar, the first swallow will act as a clog in his throat as though it were dry bread. It is nearly impossible for a healthy person to drink a glass of beer or any substance containing atmospheric oxygen products. As soon as it comes in contact with the organized elements of the system it effervesces, or else it overpowers the living organisms it meets and destroys their vitality.

Effervescence is the process of sudden disorganization into the finest atoms, and these atoms are so fine that they penetrate the nerve filaments so that the organs which perform the swallowing, or deglutition, become inactive, or for a space of time, paralyzed. But this does not prevent a glass of bad beer finding its way into the stomach. The muscles which compose the gullet, or esophagus, can be brought into such a shape that the beer can be *poured* down, the same as water can be poured through a straight tube. By this method there is a lack of the necessary deglutition. After a few trials the drinker becomes accustomed to fixing the esophagus in the particular shape as his hand, eyes, nose, tongue and his internal desires divine.

After the esophagus has neglected to perform its part of deglutition, the neighboring organs, such as the salivary and organs connected with and forming the stomach, neglect to perform their duties properly. Not only neglect to perform their share of digestion, but in time they become *unable* to do their part. It is the same with bee-keepers. They may think and presume to rear queens, but put it off until some future time, but unless they rear queens all along they will find themselves unable to rear queens at all satisfactorily. Words and deeds are two different things. They will be found *trying* to rear queens. It will take a number of seasons before their queens are of greater account than lightning bugs. They will compare with the milch cows which dairymen talk about nowadays—that eat their heads off.

In the matter of food substances, some commodities can be manufactured more rapidly than they can be grown from properly prepared soils, but we can not reconstruct disorganized elements by machinery. They may look tempting and have some agreeable aroma, but electro-magnetism has no aroma nor appearance. Force can not be distinguished by smell or taste. The system will be compelled to utilize unorganized materials which sooner or later must cause it to refuse to run from lack of power in some organ.

Honey contains the most organized oxygen of any substances. It is not only the most in quantity, but it is also strong in carbon. The use of the carbon is to produce friction, the same as sand in the box of an axle. It assists to burst and disintegrate the nutrient cells of substances, which has the effect to produce a higher and quicker action, or, as may be said, explosiveness. When a nutritious substance comes into contact with the muscular lining of the digestive organs they are set into immediate activity, but if those muscles have been partly reconstructed of unorganized material, the sensatory nerves are less protected, and the carbon acts as an irritant, and causes a griping pain. This griping is usually located in the duodenum, or that part of the alimentary tract immediately following the stomach. It indicates that the bowels have been accustomed to food substances which excited less activity. These foods may have been meats containing commercial preservatives, bread, vegetables, or fruits raised on poor soil, or any of the health preparations which may have been manufactured and stood on the dealers' shelves considerable time. Their only value is the sugar and cream or butter. Tartaric acid and ammonia are expanders, and they use up a large portion of the electro-magnetic force in the operation. In fact, they operate by the use of the magnetic force of the substance. Condensed foods like flour or honey should be expanded by mixing them with bulky vegetables like beets, carrots, cabbage, etc.

Sugar dissolves more quickly than honey because its atoms are unorganized. They are held together by adhesion instead of affinity. Any one can determine the difference between affinity and adhesion by dissolving wheat flour in cold water. If the flour is old it will mix more readily than when new. As a lubricant for the rolls of the foundation mills I always use wheat-flour paste—flour and water boiled together. They should be mixed before the heat is applied. If the flour is a year old, or if the flour is ground from wheat which is 3 years old, the paste will be so poor as to be of little account. It will wash off from the rolls a good deal like chalk, and the sheets of wax will stick. In the boiling of poor flour the paste will be thick in one or 2 minutes, but if the flour is from new wheat it requires 10 to 15 minutes' boiling. There is also a variation in the water. It may be soft like rain water, or it may be what is known as "hard" water, obtained from some wells, and contains lime or carbon. Hard water makes paste in less time, but it is not so good for use.

The age of vegetables makes a variation in the time required for them to cook. When young there is no organized oxygen. If cooked whole the outside is cooked several times while the inside part may not be cooked enough. The overdone portion is rendered unnutritious by expelling its organized oxygen and unorganized oxygen of the air taking its place, and a decided difference can be noticed in their digestion. If reheated, the atmospheric oxygen will be expelled and digestion will be improved, but the electro-magnetism is not there, and less strength will be produced.

The life of the flour paste is within the gluten cells. Heat applied bursts these cells. If cooked too long the vitality will be driven out and the paste, though soft and plastic, will not adhere sufficiently to shut out atmosphere by what is called suction. These points may seem small to the honey-producer, but to him who makes much foundation it pays to look to the paste or lubricant used on the rolls. It will require electro-magnetism. Bees have no use for dry granulated honey, because it is deficient in electro-magnetism. It has changed its organized oxygen for the unorganized atmospheric oxygen by mutual contact. If the bees added water and consumed such granulated honey, it would produce general debility in their systems. If we heat up a couple of gallons of such honey by adding water and set it off to cool, in a few hours there will be no sweetness in it. The atmosphere carries it away. If its sweet were organized cells of magnetism, such a phenomenon could not happen except to a very slight extent.

When we wish to start fermentation in honey, we mix it with water the same as we irrigate a piece of land to make vegetation grow. If sufficient honey is put in no other ferments can thrive, because all other ferments grow by the aid of atmospheric oxygen. These spores of fermentation come from the atmosphere as the atmosphere carries every variety of spore. The variety of ferment in a sweetened liquid will be decided by the amount or percentage of richness in the sweet liquid. If no ferment is exactly suited to use the particular amount of sweetness, then a ferment will be propagated by the process of one ferment succeeding another until a suitable ferment is produced by evolution. All other ferments will be choked out until the honey ferment has run its course. After this point is reached there will be no more honey in the liquid. There may be some vestiges of partially-developed cells, and from that down to ordinary vegetable protoplasm, albumen and gluten. The organized oxygen and electro-magnetism have disappeared. If this fermentation has taken place in the muscle cells it would have produced power but no intoxication. Its atoms were not of sufficient fitness to penetrate the nerve filaments. This ferment is not alcoholic any more than stomach digestion is alcoholic. But the successive and succeeding ferments which start up and utilize the unorganized substances which remain are alcoholic. After one alcoholic ferment has run its course another starts, continuing to utilize the refuse remaining from the preceeding ferment. Each succeeding ferment is more rapid than the preceding. As they can obtain a supply of oxygen only from the surface of the liquid, ferments are propagated which can thrive with less and still less oxygen until the dearth of oxygen operates as a vacuum. It is a substance that is badly out of order in respect to its equivalent elements, especially oxygen and electro-magnetism. It is less than the atmosphere. It is nearly identical to ether, which occupies the space 50 miles from our planet. Ether penetrates where air is shut out.

Some varieties of corn attain to the height of 15 feet, and others not more than 2 or 3 feet. White clover gets about 6 inches high where red clover grows 2 or more feet. I have seen pines 12 feet in diameter growing beside other varieties of pine which never attain a diameter of greater than 12 inches. The polar bear may weigh nearly a ton, while there are other bears which do not exceed the size of a house-cat. Because some colonies of bees do not exceed 10,000 to 15,000 bees, while others number 75,000 to 100,000 bees, does not change the variety of bees. Ferment fungi are varied by environment also. The consistency of honey is governed or varied by the plants from which it is gathered, and the plants by environments caused by situation, heat, and moisture, and the best way to judge of a ferment is by the taste of the fermenting substance.

To place the honey ferment alongside of the alcoholic or acetic acid of vinegar, should be compared to placing corn beside the bitter weeds. The low alcoholic ferments are as the moss which grows on the most barren rocks and require ages to show perceptible progress and living entirely upon atmospheric elements.

The purpose of alcoholic and acetic acid vinegar is to give tart or acid flavor to insipid foods. Being deficient in its equivalent elements it absorbs from the food such elements as it lacks. These elements are oxygen and its attendant electro-magnetism. Whenever foods contain these elements in sufficient amounts they are not insipid. When a mouthful of bread is masticated with saliva its starch changes into sugar, and the sugar renders the bread sweet in taste and in need of no farther flavoring or lubrication. If it does not act that way, then salivation is poor, or else the bread is "make-believe" bread. Butter, honey, or vinegar added to a dead substance is like putting cartoons (not cartons) on sections of honey which would be hard to sell otherwise. The cartoon does not sell the honey, but the honey sells the cartoon. Hungry people do not come to the grocery store to buy pictures. Fancy receptacles and pictures are "make believes." Turn them down! "Turn down" the dealer and "turn down" the producer. This matter of nutritious food is one of the instances where the "hand-to-mouth" fashion of living should be superelegant.

Cartoons of fancy girls, fat bums, and highly-colored posies work finely in the store and along the way home, but when the contents are spread before the guests, there are likely to be misgivings. The disappointments come from the inside, not from the outer show of the package. If there were no disappointments in the foods there would be no need of showy packages. Showy packages are one of the prolific causes of perverted appetites, diseased digestive organs, and the filling of "early graves." Put a quietus on the murderous work by keeping this outside show between yourself and the grave. Let it die the death it merits. If nutritious food can not be bought then learn to produce it. You will have to study. Perhaps progress backward one or two generations. It may make us odd and unpopular. The sacrifice is worth while if you value life.

Most of the competition of the present age is in the searching for the most worthless substance to put up in the most deceptive packages and sell at the same price as the genuine, honest product. Alcoholic vinegars cause us to eat food for the vinegar only, and a greater quantity than the system needs, so that the bulkiness is a clog to digestion, and for this there is much repentance, but the causes of the troubles are not discovered.

The commendable qualities of acetic vinegar are a deception and a snare—its sparkling clearness, its keeping, and its ethereal penetration. It is a bare foot on a live coal of fire. It creates activity—*in a way*. We can not conscientiously fight such frauds as corn syrup while matters are tangled in the honey camp. If chemical science can do no better, we best go back to the vinegar our mothers used to make.

Chatsworth, Calif.

Beedom Boiled Down

Some Varieties of Bees.

In a well studied article in the Bee-Keeper's Review, Ralph Benton, speaking of Cyprians, says:

> "In temper they are very excitable and, when once aroused, their temper is of longer duration than other bees. In opening the hives, care should be taken not to jar them or let the light in too suddenly. The writer prefers to handle them without smoke, as they resent its application, characteristically standing and sizzling until it clears away, when they vent their rage and sting viciously. On the other hand, with care, Cyprians can be handled with perfect immunity without veil or other protection. They are a most vigorous and prolific variety, good honey-gatherers, and defend their hives well. They shake easily from the combs, although they remain quiet under manipulation. They are good winterers, and appear to be most resistant to the attacks of disease. They have the longest tongues of any bees, and so visit a wider range of flowers. They will find honey when other bees give up, and their power of flight is markedly better than some other varieties. They cap their honey watery, due to the filling of the cells so full, and they do not gather much propolis. They start innumerable queen-cells, and so, in point of number, are desirable for the queen-breeder, though their cells are not as large as those of Carniolans—the largest cell builders."

After speaking of the gentleness of the Caucasians, he says:

> "They are good honey-gatherers, defend their hives well, winter well, build up rapidly, and we have reason to believe are fairly disease-resistant. They cap their honey only fairly white, and gather propolis at certain seasons, namely in the fall, thus not making this an undesirable tendency for comb honey production. The propolis when gathered is bunched about the entrance and lower part of the hive in an interesting and peculiar manner. These bees, together with the Cyprians, have an average swarming tendency on account of their prolificness and are better kept in large hives."

As to Carniolans:

> "They may be handled with but little or no smoke under ordinary circumstances, and respond well to its use. They are the most excellent winterers and build up the fastest of any bees, rearing brood under the most adverse conditions. They are the least inclined to rob of any bees, and are most excellent searchers for honey. They have splendid powers of flight, but are governed by atmospheric changes in a most noticeable degree. At all times it may be said that they show their exact emotional, or other states, and so are a bee well adapted for general use, since the apiarist can depend upon them and may know their condition in an instant. They are very prolific and do not permit of crowding. They cap their honey white, and gather the least propolis of any bees."

With regard to crosses, he thinks the two most promising are those resulting from the mating of queens of pure Cyprian blood to drones of Carniolan blood, and the like queens mated to Caucasian drones. It is found, in general, that the queen transmits the prolificness, honey-gathering, and like qualities, while the drone transmits the temper, and he says: "In the case of the majority of the Cyprio-Carniolan or Cyprio-Caucasian queens the desirable qualities of the two varieties obtain in the progeny." But, as Editor Hutchinson says with regard to these crosses, "the difficulty is to retain them—as the years go by there are all sorts of mix-ups."

Size of Brood-Chamber and Swarming

It may be that those who are just beginning bee-keeping may learn, before the close of their careers, just what steps to take to prevent all swarming, but it certainly is not yet a solved problem. Some things, to be sure, are pretty generally agreed on, but even as to some of these, questionings sometimes arise.

It is pretty generally agreed that a very small brood-chamber favors swarming, and that a large one goes a long way toward prevention, and the very small amount of swarming the Dadants have had with their large brood-chambers strongly argues in that direction. Yet if size of brood-chamber alone would settle the matter, we ought easily to settle upon a size beyond which there would be absolutely no swarming. That size has never been found; bees have been known to swarm when they had unlimited room in the brood-chamber, as in an attic.

The fact is, probably, that the size of the brood-nest, or the room occupied by the queen, is the important thing, and this does not always coincide with the size of the brood-chamber. While it is impossible to have a very large brood-nest in a very small brood-chamber, it is possible to have a limited brood-nest in a very large brood-chamber.

This matter is discussed in the Irish Bee Journal, by that level-headed Scotchman, D. M. Macdonald. He argues that a frame may be too deep as well as too shallow, the bees occupying too much of the deep frame with honey. So he favors a medium depth, and thinks the "standard" is about as near the right thing as we are likely to strike. The "standard" frame adopted by the British Beekeepers' Association is 17x8½, and doubtless that is the frame to which he refers. He says:

> "Last year my only swarm was from a large hive, and I read lately of a case where all the large hives swarmed, placed alongside those with frames the equivalent in depth of our standard size. In another case known to me, as many swarms are obtained from deep as from standard frames, and as a rule they swarm before there is any apparent necessity.
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> "A fellow teacher, fond of experiment, supplies me with the following in regard to deep frames as a deterrent. He made hives with frames 17 inches by 13 inches deep, thinking that thus he would check or eliminate the swarming impulse. Every one of these swarmed, though the brood-chamber was not taken full

> possession of. Colonies which he never would expect to swarm in the smaller hives, swarmed in these large ones, so he naturally concludes that frames can be too large for security."

Uniting Colonies.

I have accidentally discovered that, if both queens are taken away 3 hours or more previously, both colonies are temporarily demoralized, and have no fight in them, and, after a good smoking, you can unite by alternating the frames, without scent or flour, and without the loss of a single bee through fighting. After uniting, insert the queen in a cage—a cage which does not require disturbing the hive to liberate her. This is a simple plan, and will work well every time, and at any time of the day.—John Silver, in Irish Bee Journal.

Honor Among Bee-Keepers.

Oliver Foster says this in the Bee-Keepers' Review:

> "In teaching and training the boys for the bee-men of the future, the code of honor, accepted by all worthy apiarists, should not be overlooked, viz., that he who first plants an apiary within a given bee-range, has a moral right to that range as a bee-pasture, while he utilizes its honey-resources. I am persuaded, from costly experience, that, from the standpoint of self-interest alone to all concerned, this rule should be observed."

Commenting on this, Editor Hutchinson says:

> "The Golden Rule of bee-keeping mentioned in this issue by Oliver Foster, is one to be heeded by all bee-keepers. It may be a long time before a man can legally control the bee-pasture of a region without also owning the land, but, while waiting for that time, we can all obey this rule—never to encroach upon occupied territory. A bee-range belongs to the man who first occupies it, so long as he continues to occupy it. The man who will crowd in upon the territory of another should be looked upon as little better than a thief."

Queens Fertilized in Upper Stories.

At the time "Scientific Queen-Rearing" was published I thought it was no trick at all to get queens fertilized from upper stories with laying queens in the hives below, as I succeeded to my perfect satisfaction during the basswood flow of 1888; but 20 years of trial since then has proven that I have to record 19 failures to one of success, taking the score of years together. The many private letters I receive also show that I am not alone in these failures.—G. M. Doolittle in Gleanings.

How to Know an Old Queen.

I can recognize John Smith at a glance; but to tell you just how I recognize him so that from my description alone you can recognize him at a glance, is probably beyond me. In the same way it is easy to recognize an old queen, but not so easy to tell how. And yet it's a fair question, so I'll make a stagger at an answer. An old queen is darker and more shiny in appearance, due to loss of plumage, probably. She does not move over the comb with the vigor of a younger queen, but more slowly and feebly. In many cases she seems to lose her footing, and acts as if about to fall off the comb. Now, that doesn't seem to tell much, but I'm not sure I can do any better. I'll be glad, Mr. Editor, if you or any one else will improve upon it. It is only fair to say that even the few signs I have given are not infallible. A queen that has been balled may look black and shiny while still young. Again, I have seen a queen which looked not very old, and yet my record told me she was three or four years old.

[You have given the general characteristics that go to show an old queen; but there is a certain indescribable general appearance which is at once recognized by the veteran queen-breeder, and which to him is almost infallible.—Ed.]—Gleanings in Bee Culture.

Apiculture in Spain.

The editor of Gaceta Apicola de Espana, in the September issue, laments the condition of bee culture in Spain in very pessimistic terms. He says that, on many occasions, he has referred to the superior position of bee-keeping in Cuba, where the conditions are no better than in Spain. But he says the style of bee-keeping in Cuba is North American, not Spanish, thanks to the easy communication with that country. (The Spanish usually term our country Norte Amerique.) In Cuba the predominating flower is the campanilla, which produces a very light rich honey, much sought after by foreign merchants who export it to Europe. He claims the honey of romero (rosemary), which is common in Spain, would compete with the campanilla if given an opportunity; but the amount of honey produced by the movable-comb system in Spain is relatively very small; whereas in Cuba movable combs are the whole show. This accounts for Cuban superiority, both as to quality and quantity.

The editor is correct. Spain ought to be a great honey country. It has the right kind of flora, and excellent climate, and proximity to great honey markets. In fact, there is a great opportunity right now for the Spaniards to show what they can do if they will only follow the lead of the Cubans and import American bee-supplies by the carload. Will they rise to the opportunity and grasp it? They can very speedily overtake and surpass all European or West Indian rivals.—Gleanings in Bee Culture.

The Price of Bee-Papers.

Editor Hutchinson, of the Bee-Keepers' Review, in his October number, had this to say on the above subject, among some other things that we will not take space to copy:

> "The Review has frequently commented upon the price of bee-journals, more, perhaps, than has been abolutely necessary, but nothing has done more in this country to foster, encourage and build up bee-keeping than have bee-journals. They are deserving of success; not only this, but it is decidedly to the advantage of the bee-keepers to have them succeed; and no journal can become a permanent success when published at too low a price. There has come an era of low-priced literature, and many class journals, forgetting that they appealed to a limited number of readers, immediately lowered their subscription price, hoping thereby to roll up enormous lists, only to be grievously disappointed. I doubt if there is a bee-journal that would greatly increase its list by reducing its price to 10 cents a year. Bee-keepers are not so greatly interested in their price, if it is within the bounds of reason, as they are in the character of the journals, in the information and helpfulness that they bring.
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> "Some fifteen months ago Mr. York was publishing a weekly at $1.00 a year; now he is publishing a monthly at 75 cents. One more boost, Brother York, and you will have the price where it seems to me it ought to be. You certainly are to be congratulated upon the moves you have made. As you say, bee-keepers are not cheap folks. They are willing to pay a fair price for their journals. A paltry 25 or 50 cents more each year is scarcely noticed by each subscriber, but, in the aggregate, it means all the difference between success and failure for the publisher. Brother York says that no bee-journal has been successful at so low a price as 50 cents a year. He might have gone further and said no one has been successful at less than $1.00 a year. In the publication of a journal there are a whole lot of fixed expenses that remain about the same, regardless of the price of the journal, the frequency of its issue, or the size of its subscription list, and, with the limited circulations that fall to the lot of bee-journals, there does not enough money come in to meet these expenses and leave a profit, unless the price is about $1.00 a year. If Brother York should eventually raise his price to $1.00, all of the bee-journals on this continent would be published at the same price."

Of course, it may become necessary for us to raise the price of the American Bee Journal to $1.00 a year. If we find that it cannot be kept up to its present standard at 75 cents a year, the only thing left for us to do will be to raise it to $1.00, as Mr. Hutchinson suggests. However, if we can have a sufficiently large number of subscribers, and also advertising patronage, we expect to be able to keep the price at 75 cents.

As Mr. H. says, there are certain fixed expenses that remain the same regardless of what the subscription price may be, such as office rent, cost of engravings, type-setting, etc. These could not be reduced even if a paper were only 5 cents a year in subscription price.

We always want to give our readers good value for their money, and are satisfied that we have done so, and are now doing so. We are now giving 384 large pages of reading matter for only 75 cents. That is quite a book. Of course, if there were a half-million who would take the American Bee Journal regularly it would be different, but, as Mr. H. remarks, there are only about so many who will subscribe for a bee paper anyway, and their number is not large enough to allow a publisher to issue a bee-paper at as low a price as is possible to put out a publication of a general character.

But what we would like to see our readers do now, is not only to renew their own subscriptions as fast as they expire, but also send at least one new subscription at the same time. This would soon double our list of readers, which would go far toward insuring the permanency of the present 75-cent subscription price.

Objections to Single-Tier Cases.

It is a matter of some consequence for a bee-keeper to decide as to the kind of shipping-cases he shall use. Cases containing 12 sections each have the argument in their favor that a consumer will often purchase a case when he would not think of buying a case containing 24 sections. On the other hand, it is argued that consumers seldom buy comb honey by the case, and when a jobber or wholesale dealer sells to the grocer it is no more trouble for him to sell the larger case than the smaller. Then, too, it costs the producer considerably more for 2 small cases than for a large one.

Of course 12-section cases are always

single-tier, but when 24-section cases are under consideration there is a choice between single-tier and double-tier. According to the catalogs double-tier cases are little used, but it seems that at least Colorado bee-keepers do not hold single-tiers in highest favor. The case is thus strongly put by Wesley Foster, in Gleanings:

> Comb honey is not wanted by the dealers in single-tier shipping-cases. Several cars of comb honey could be sold in the next week if the honey were put up in double-tier glass-front cases, and there are several cars of comb honey in Colorado packed in single-tier cases, some without glass, and also lacking drip-sticks, and it would have paid the producers to study the market requirements more, and paid less attention to the few cents saved on a case. Two objections are as follows:
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> First, in handling a carload of honey in single-tier cases one will feel twice as tired as after handling the same amount in the double-tier. One can not get the hand-hold as close to the edge as with the double tier, and there is less room for the fingers.
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> Second, if a case is picked up by the corners it will often twist enough in carrying to break or crack some of the honey. This is almost sure to occur if one carries in two cases at a time and does not grip them just right.
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> Third, the top of the sections is flush with the top of the sides of most of the single-tier cases, making breakage almost sure. In shipping, expressmen and freight-handlers drop the end of one case in the middle of another case on the pile; and if they do this at all roughly the breaking of comb is certain. Cases are stepped on often, and a single-tier case simply will not stand this usage, while a double-tier case with half the surface is safe, provided there is an eighth-inch space between the cover and the top of the section.
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> Fourth, from the grocer's standpoint, the glass in a case is for showing the goods; and the more goods that are shown, the better the impression, and the more honey sold. Furthermore, it is a guarantee that at least a fourth of the honey is all right if a double-tier case is used.
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> Fifth, a single-tier case takes up twice as much room on the counter, showcase, shelf, or floor; and since one can not put anything on top of it and still get honey out of it, the saving of half the floor space by the use of the double-tier places it far in the lead.
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> The objection brought against the double-tier is that broken honey will leak on to the section below. Leaky and broken honey should not be cased for shipment any way, and experience shows that this objection is not worth considering.
>
> A uniform case, the double-tire glass front, has been adopted by Colorado bee-keepers. Let all use it, and grade strictly according to the rules.

Airship Built on Bee-Model.

Mr. F. W. Schroeder's new airship is designed as nearly as possible on the model of the bee. He can rise almost perpendicularly into the air and travel at great speed. When the Schroeder airship comes to be given away with a pound of foundation, the occupation of vagrant swarms will be gone, for we shall be able to overtake them and hive them on the wing. We recommend the idea to our most progressive suppliers of bee-keeping appliances, and to all whose sensitive emotions are antagonistic to the operation of clipping queens' wings.—The Irish Bee Journal.

Capping-Melter.

A home-made machine by which the cappings may be melted as fast as cut is thus given by Harry Lathrop, in Gleanings in Bee Culture:

> I had the tinner fix a melting-pan by taking a large stamped tin dishpan, placing one a size smaller in it and connecting them together with braces, leaving an inch space between them on botom and sides for water. A half-inch copper tube reaches from the bottom of the inner pan through both pans, and projects eight inches. In use, this double pan, with inner space filled with soft water, is set directly on an ordinary cheap gasoline-burner. A comb-rest is provided by means of a piece of pine board run through the handles of the pans. A small nail driven through from below makes a point to hold the frame while uncapping. The stove is kept burning continuously while extracting; and if it does not quite keep up with the work it can be left burning during the noon hour or after the day's work is finished. I can see no danger from leaving it, but be sure that the pail under the spout is large enough to hold the contents of the pan. It works finely, and I see no need of any thing better. The wax and honey run out into a pail, but there is a certain amount of slumgum that will accumulate in the pan. This is kept from running out by means of a piece of tin notched on the under side, set about ½ in. back of the spout. After the pan has cooled, this slumgum can be peeled out in the form of a cake, to be run through the Hatch-Gemmill press if the bee-keeper is so fortunate as to possess one of those desirable machines.
>
> Any machine devised to use any more heat than I have indicated, or any plan to run the honey over a larger heated space, will injure it. The honey must run out freely as soon as melted, and one should use the minimum of heat. We now have no cappings on hand to bother at the close of each day's extracting.

Fall Preparation of Bees.

In order to have an extra force of young bees for winter, and at the same time an extra supply of stores, Alex. Dickson, in the Canadian Bee Journal, thus advises to proceed in the fall:

> Remove the outside combs, which are full of honey, and replace with empties put in the center. Your young queen is thus given a chance to do her best before the closing of the laying season, and you will find when the time for fall feeding comes that your colonies are flowing over with young bees. A colony should have at least 25 pounds of honey to winter on, so be sure to feed up all colonies having less.
>
> The combs you have taken out to give the queen a chance to lay you will put away till feeding time, and then you can give them back as winter stores.

Extracting Outfit for Out-Apiaries.

The question whether it is better to have a separate outfit for extracting at each apiary, or to have a single outfit to be hauled from one apiary to another, depends upon circumstances, according to R. T. Rhees. He says in the Bee-Keepers' Review:

> "It is cheaper to fit up a small house with a stationary extracting outfit, than fit up one equally good in the shape of an extracting wagon, hence, if a bee-keeper has only two or three yards, or where more than that number are so isolated that they can not be reached in a continuous route, I would advise a small house at each yard, hauling about only such light apparatus as can not well be kept at each yard.
>
> "It is cheaper to fit up one good extracting outfit on a low-wheeled farm truck, than it is to fit up one equally good, or even a part of one, at each of many yards. Besides, it is quite a saving of time to have everything in place ready to commence work when you drive into the yard, which is not the case where the local honey-house is used for extracting. Therefore, I would use an extracting wagon where a number of yards are so located that they can be reached in a rotation by making short drives from one to the other."

Hot Bee-Prank in New York State.

The following interesting "bee-story" was sent to us by S. Davenport, of Indian fields, N. Y., it having appeared in a local newspaper:

> From time immemorial mysterious happenings occur on Hallowe'en night and are ascribed to various agencies, from the fairy elf of imaginative origin to the mischievous imps led on by his Satanic majesty. Some of the doings may be safely attributed to the harmless fairies and others indeed to the evil one himself. Of the latter category of deeds provocative of human wrath, many are conceived in the brains of wild and reckless youth, whose minds are bent on having a little fun and a good time. And they generally get it during the nocturnal darkness of Oct. 31st.
>
> This year's anniversary has presented no exception to the general rule and many instances of Hallowe'en pranks have been noticeable, from the lifting of the front gate and the displacement of signs and other movable objects from their wonted locations, to the elevation of grindstone and wheelbarrow to the roof of the blacksmith's shop, the overturning of old vehicles adorning his premises, the removal of wheels to distant parts and casting them down the Hannacroix bank, and later still, on election night, to the removal of hives of bees from the apiary on Snider Hill and carrying the same, five in number, some 200 yards up the road and depositing them over a stone wall in a bed of dead leaves, where they would not be readily seen. This work was attempted on Hallowe'en night, but the owner being disturbed in his slumbers, the perpetrators fled in fright lest they be detected, but on election night they accomplished their purpose and made off with their booty. What strenuous effort and sacrifice of sleep and comfort it required to secure a little mischievous fun, to say nothing of the many lance thrusts they received from the innocent honey-bee. There was evidence that they had a hot time of it as they went on with their nefarious work, ruthlessly disturbing the homes of the innocent honey-bee and causing thousands of them to die. They went to bed that morning nursing swollen heads and smarting fingers, the just reward of their deviltry.
>
> To accomplish their job they improvised a hive-carrier out of some rails, but as they got along under the Greening apple-tree their carrier broke and let their bees fall to the ground. Thousands of them swarmed the air, and ugh! ugh! hi! hi! ugh! ugh! resounded on every side, driving them from their task. Here the director of the party met with a sad mishap. Whirling about in a rage as the little stingers beset him on all sides, he accidentally tore off one of his "cloven hoofs" and in the agony of his torture he was glad to escape and leave his "hoof" behind. Now the trail of his meddlesome presence can easily be traced by reason of his stump footprints.
>
> With the bees subsiding under the chilling effect of the night air, the boys returned to work and succeeded in reaching their destination and then depositing the hives over the stone wall. Here another mishap occurred. One hive was divisible, consisting of two stories. In placing it over the wall the hive came apart and the brood-chamber landed down among the leaves bottom side up and with all the brood-frames displaced. This great disturbance of the bees again aroused their anger and they swarmed up about the heads of the miscreants peppering them with hot shot in righteous vengeance for the outrage on the sanctity of their home. Thus a lot of fun was enjoyed, but they paid dear for their whistle.
>
> The sequence of this exploit was not as enjoyable to the victim as to the perpetrators, notwithstanding their merited punishment. After discovering by the merest accident where the hives had been deposited, he had a job of it to return them to their old locations and to get them rearranged in their normal situations. It was like the tug of war to lug the hives back single-handed and unaided, and then to clean the brood-nest of each of the dead leaves imbedded therein and to readjust them. There was no fun in it, but with proper care there were no stings. Perseverance and perspiration did the work, and finally it was accomplished. It took just 4 hours to restore and readjust the hives of bees to their old location.
>
> These hives of bees were some of the best of the apiary of 32 colonies. Each possessed a young queen and from 10,000 to 20,000 bees. They had been fed up for winter and were in prime condition for passing the critical period of their existence. When they were restored to their summer stands they were very much weakened, showing that many thousands of bees had perished by this wanton marauding. It may have been jolly fun for the boys, but it can be easily seen that it was no joking matter for the bee-keeper.
>
> It was a satisfaction to the victim to know that the perpetrators did not have the pleasure of seeing him tugging along with the heavy hives with the drops of perspiration flow-

ing from his cheerless brow. Probably they chuckle with delight as they realize the arduous task they arranged for their friend, and they slap each other on the back and exclaim with glee, "That was a bully job!"

After completing their work on their return homeward, they finished up by tearing from a tree by the roadside one of the forbid notices posted by their friend. This act verified the suspicion that the work they had accomplished was not all a Hallowe'en pleasantry, but partook more of the spirit of retaliation for the interest and activity of the ringleader and organizer of the Anti-Hunters. Thus he, though no more responsible than others for the anti-hunting movement, gets his fingers scorched for pulling their chestnuts out of the fire while they go scot free from any annoyance. Well, for the satisfaction of the offenders, it may be noted that the patient takes his medicine all right, and he makes no complaint and he thinks he is convalescent, though the prescription was rather a drastic one.

Following the incident here related, an interesting feature transpired. It was interesting to note the quizzing look in the eyes of each of the perpetrators as the victim casually met them and scanned their countenances, their wandering gaze seeking to discern whether any irate emotion possessed his soul because of his recent unique experience. Guilty consciences need no accusing.

Bees and the Pure Food Law.

A friend sends a newspaper clipping from the Des Moines Sun, of Oct. 18, headed, "WISE BEES: They preserve their honey with formaline, and food law authorities can't punish them," which reads as follows:

H. R. Wright, Iowa's State food and dairy commissioner, who was commanded by the last legislature to arrest and punish all adulterators of foods, has been baffled.

Mr. Wright has just discovered by a recent analysis of pure farm honey a trace of "formaline," which is a preservative forbidden by the Iowa law.

An investigation showed that the adulteration was by the bees themselves.

Milkmen throughout the State who have used formaline have been punished, but when it comes to the prosecution of bees, the State officer admits he is "stung."

In the meanwhile the scientific folks are asking if the bees were wise to the fact that formaline is a preservative, and gathered it from some plant for that reason.

All of which is very interesting and instructive were it not that it lacks the one necessary element of truth, for there is no truth in the statement that honey contains formaline put in by the bees or any one else. The likelihood is that Commissioner Wright will have his first intimation of the matter upon seeing the item in print. It is well known that honey contains formic acid, and some ambitious reporter owing to the "form" of the first syllable in each word has got the two words mixed. The bees have no notion of violating the Iowa pure food law.

A Good Pennsylvania Report.

We have received the following from Fred W. Lidstone, of Scranton, Pa.:

Editor York:— Enclosed you will find a clipping published in the Scranton Times, of October 16. It is certainly of interest to the fraternity to learn of the crops produced in Pennsylvania. I have read what Mr. Dadant says concerning "locating an apiary." If this story is true, the best place to locate is Pennsylvania.

Before congratulating Mr. Coons it might be well to obtain his report for the season of 1908, inasmuch as it might add materially to his defense. Fred W. Lidstone.

Scranton, Pa.

The clipping referred to in the foregoing, reads as follows:

A news dispatch from Coudersport, the capital of County of Potter, says:

"R. L. Coons, accompanied by his son, left for New York Wednesday noon, where Mr. Coons will arrange the sale of his 1908 honey product. Mr. Coons is one of the largest producers of honey in the United States, as well as one of the most successful handlers of bees. A day or two ago he shipped a carload of superior quality of red raspberry honey to New York city. The car contained 30,000 pounds, or 15 tons, which represents what Mr. Coons has produced the past season from 180 colonies of bees. He has a single colony that has produced as much as $15 worth of honey in a season, and one colony that has produced 300 pounds. He expects his carload to increase materially his capacity for production next year by the addition of many more colonies of bees. He understands the bee-business thoroughly, and since being in Potter county has had only one swarm leave him when swarming, and get away where he was unable to find them."

Following the suggestion of Mr. Lidstone, we wrote to Mr. Coons, who responded as follows:

George W. York & Co.—

In answer to yours of October 29, I would say that the item in question is in the main correct. I shipped 30,000 pounds of honey to New York this fall from 184 colonies of bees when the honey-flow opened. I also made about 50 colonies increase.

Instead of $15 worth of honey from one colony, the item should have been $45 worth, all in one-pound sections.

I find in looking over the record of my colonies that my 10 best colonies produced a total of 2731 pounds of honey in one-pound sections the past sesaon.

I think that my success is mostly due to our hives and appliances, and original methods of handling bees, and not to my location, since other bee-keepers in this vicinity do not have more than ordinary success.

R. L. Coons.

Sweden Valley, Pa., Nov. 16.

Mr. Coons certainly made a record the past seson, so far as a large honey crop is concerned, in the State of Pennsylvania. No doubt our readers would be greatly pleased, and also benefited, if Mr. Coons would tell *just how* he and his bees managed to do it. It ought to be an interesting story.

Southern
Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Beginning with Bees—A Texas Cyclone.

The October number of the American Bee Journal is at hand. To say that I eagerly read it from front to cover expresses it very mildly. Just to think what I've been missing for lo, these many years?

My experinece with bees dates back some 20 years, back to those barefooted, rabbit-hunting, boyhood days when I frailed the ripe peaches off the old orchard trees that sheltered those old box-gums of my father's. In fancy I still see them promiscuously scattered about, see the great masses of bees that invariably were "laying out" during the latter part of summer. Not merely because the weather was warm, but because there was no room for them within. Surely those were easy days for the bee-keeper and also the bees. To hive a few swarms in the spring and "knock out the heads" of the heaviest in the fall, take out what was deemed necessary to last till next season, was the usual mode of procedure. Sometimes the bees would build great slabs of comb on the outside on the underside of a projecting cover. What a paradise such a country would be now with such up-to-date methods as we now have.

My grandfather was one of the pioneer settlers, coming from Iowa when my father was 5 years old. That was nearly 60 years ago. He also kept bees then, mostly in log-gums, lumber being very high, and hauled from the mills with ox-wagons over 100 miles. He was known as the pioneer bee-keeper, sometimes having 100 or more colonies. There was little or no market for honey then, but old settlers say that there was never a meal served at his house that there was not honey on the table. So you see that it is only natural that I take to the bees as a duck takes to the mill-pond.

Some 10 years ago, having arrived at the very mature (?) age of 18, feeling entirely master of the situation, I decided that I could paddle my own canoe. That is, with the meager help of a certain blue-eyed maiden that lived "just over the way." Among the necessary equipment of the aforesaid canoe I considered a colony of bees. Not a bad investment. A friend agreed to supply the same for the sum of $4—old, rickety box-hive, bees and all—for which I paid with lawful coin.

Years rolled by as years are wont to do. I was too busy to pay attention to my bees. Occasionally I would stand by the side of a hive and watch the bees go and come for a few minutes, then lift it gently to see if it was "getting rich," which much-desired condition would generally materialize in early fall. Then the tops would be pried off with an ax, the honey cut out down to the cross sticks, the top nailed down, and it was never molested again till next season. And so it would have continued probably till this day, had I not chanced to see some patent hives at the home of a friend. These contained pure golden Italians, the first I had ever seen. My friend noticing my apparent interest in them, lifted a cover, took out frame after frame, showing me the beautiful yellow queen, and her thousands of yellow followers. This little kindness, a trifle within itself, was the real beginning of my bee-keeping, for since then the fever has never left me, and promises to be a lifelong affliction. This was some 2 years ago, and resulted in my soon being the proud possessor of 3 of those colonies of banded beauties. Last season they did exceptionally well, increasing from 3 to 10; I also let 2 or 3 swarms escape to the woods. I also got 400 pounds of very fine honey from the 10, some of the first swarms storing more surplus than the parent colonies, one sending out on the 28th day, a fine swarm.

All went well. All hives were very heavy at the end of the season. All working busily till November. All wintered well, but a late cold spring and constant rains necessitated some feeding, which was attended to promptly, and soon every colony became very populous, and it was very apparent that they were only waiting for fair weather to get busy. I was all in readiness for this. A long row of new, empty, freshly-painted hives, with sheets of foundation stood waiting for new swarms, one of which had already come out, but alas, "Man proposes, but God disposes." Thunderstorms and floods became almost daily occurrence, flowers were blooming profusely, sweet scented alfalfa fields on every hand. Oh, how I wished for "that good old summer time."

Sunday, May 10, was warm and pleasant. I lay on the bank of a ravine in the shade of a persimmon grove, watching the countless numbers of yellow toilers humming busily among the white, bell-shaped blossoms. I lay there building "Castles in Spain," but happily ignorant of what the near future had in store for me. Night came, also a thunderstorm. Monday dawned bright and clear, a perfect day; my hope rose accordingly. Perhaps after all we would have some fine weather; but not so. Tuesday dawned dark and threatening, great heavy clouds hurrying overhead urged along by a strong south wind. These became thicker and heavier till about 2 o'clock p. m., when the muffled rumble of the thunder far to the southwest betokened a coming storm, and at once put a damper on my newborn hopes. I was in the field trying to save my first cutting of alfalfa, and 5 or 6 tons of such hay is no small item to the average farmer. Therefore that thundercloud had to "show me" before I would quit work. This it proceeded to do with a vengeance, and when the rain began falling so thick that I could hardly see, I cast one sad "Maud Muller" look at that 5-acre hayfield, climbed into my wagon, turned a very unwilling pair of mules' heads square in the face of the wind and rain, and pulled for wife's house a half-mile away.

To unharness, and change my wet clothes for dry ones, was only the work of a few minutes. It was still raining with deafening thunder, but I paid little attention to it. I picked up "Langstroth on the Honey-Bee," and was soon lost in its pages. I had read only a short time—some 20 or 30 minutes, I suppose—when I suddenly became concious of a profound stillness. It was still raining hard, but the wind that hitherto had been dashing the rain in sheets against the window panes was ominously still. I had but little time for conjecture, for almost as I became aware of these facts, a gale struck the house from the east, then suddenly veered to the west. Then came an awful roar. Windows and doors were crashed in, the air was filled with gravel, flying timber, etc., and I instantly realized that I was in the midst of a Texas cyclone. Two little children playing on the floor ran screaming into an adjoining room. I quickly followed, not wishing to become separated from them. I caught them, wrapped a strong arm around either, and calmly waited for the worst, but in a few seconds it ceased as suddenly as it came. Meanwhile my wife came into the room with the baby cooing serenely despite the fact that both were drenched and daubed with mud and dirt. Our house was left standing with only windows and doors blown out, books and furniture were scattered and overturned. I stepped out into the yard; fences were gone, large shade trees, oaks and elms, were split and twisted off like so many weeds; lumber and debris of all kinds was scattered everywhere.

Almost the first thing I noticed was that I didn't have a single bee-hive left. The shady elm that stood in their midst was a shapeless mass of foliage; pieces of comb and their splintered hives were strewn everywhere, while the ground was literally covered with dead and half-drowned bees. As the rain was still falling these were washed and drowned by thousands.

To the south I could see the once nice house and barn of my nearest neighbor, now almost totally destroyed. One little fellow sitting on the back porch churning was blown 50 yards and dropped unhurt to the ground. To the north there were 2 neighbors living very close together. One house was badly wrecked: the other entirely swept away, being blown into a raging creek, and contents washed away, but luckily the family were at a neighbor's only a short distance away, but entirely out of the storm's path, which was from 50 to 300 yards in width.

The next day while clearing up wreckage, I came across a super upside down, wet and soggy, but containing about ½ gallon of bees. The super frames being intact, I picked up a partly wrecked hive-body, shook the water from several frames of brood-comb lying about, placed these in the body, and put the super on top, doing this more for a place for the bees to congregate than from any idea of saving them; but several days later, when I had gotten things straightened up a little, I noticed those bees were working in and out, apparently contented, and, as some were carrying in pollen, I decided to investigate, and found not only larvæ and sealed brood in the extracting frames of the super, but the very finest queen I had owned. The super being painted different I knew at once where it had come from. Fine weather followed, and I soon had a strong colony.

Not daunted at my loss, I purchased 8 colonies from my old-time friend. He also made me a present of a very fine colony. These I brought home the latter part of May. Those I bought I have divided to the very limit, breeding my own queens as per directions given in the Langstroth book, all being bred from my "storm queen," as I call her, and a very fine, pure, imported Italian direct from Italy, which arrived about June 1, having placed my order last fall.

With the 4 colonies of blacks that I had been keeping at my father's, which I have since requeened, I now have 32 colonies, all with beautiful, prolific, golden queens, which are now laying right on (Oct. 22) as if they never expected any winter. From the colony presented me which has not swarmed nor been divided, I have taken 150 pounds of comb honey, and it is in fine condition for winter.

I have just read Mr. Doolittle's method of queen-rearing, and, with the American Bee Journal and Gleanings, I intend to be master of the situation next season, provided no cyclones come this way.
O. Saunders.

Trenton, Tex., Oct. 22.

Foul Brood Work in Texas.

The great danger of spreading of bee-diseases, foul brood especially, requires that special precautions be made in due time at least to check the spread, if not entirely to eradicate these diseases. This is the aim of the Texas Bee-Keepers' Association, and strong efforts have been made for an annual appropriation from the legislature for this purpose. Five thousand dollars has been asked for this year to be used in two years, or $2,500 annually; part of which is for salary of a State inspector and the rest for traveling and other expenses. On account of the size of the Lone Star State, the traveling expenses will be quite an item. Hence it is apparent that such an appropriation is hardly ample.

I hope to be able to report further on this matter later. There are numerous letters of enquiry sent me that I can not reply to until further developments.

Regarding Letters of Inquiry.

It should be remembered that I am not "an information bureau," and can not spend my entire time writing letters in reply to enquiries about locations in Texas, where to buy bees, and a thousand other questions of the same nature. Besides, I do not think it fair for me to neglect *my* business and hunt a "nest" for others, so all they need to do is to jump into it. I was not helped that way when I started, but had to hunt my own nest. If I were in the real estate business it would be different, but I receive annually several hundred letters, many without return postage stamps even, and I can not continue to answer them. If I were in a position to do so, it would, of course, be a pleasure to me. All other letters are highly welcomed, however.

A "Trick" on Robber-Bees.

A. H. Knolle, of Hondo, Tex., gives me the following plan in a recent letter:

"I note what you say about robber-bees in fall, and I will give you my plan, although you likely know it. If the bees are not working, and are inclined to rob, just set out a few hive bodies of honey and get them started on it on one side of the apiary, then have 6 men in all, and as soon as the bees get started on the honey well, go to extracting, and as fast as you have a few empty bodies set them out for the bees to clean. If the bees get a little ahead set out a few more bodies of honey, but 6 men can keep 200 colonies of bees busy. If it is late in the fall or winter, and you want to heat the honey, stack up about 50 or 100 bodies in the honey-house, have a sheet-iron stove good and hot for about 6 or 8 hours, and then go to extracting, which we generally do from 3 o'clock in the afternoon until perhaps 11 at night."

A Remarkable Overflow.

Last May I experienced the most remarkable overflow on record, I feel sure. The apiary in question was located in a valley near a little ravine, and was 100 yards from a little gully, which was hardly noticeable. One late afternoon a fearful rain fell, and the water came up in the apiary and covered all the bottom boxes, or brood-chambers, or over half of the colonies. At this time a heavy honey-flow was on, and the hives full of honey. The flood came on Saturday afternoon. I knew that the bees had been flooded, but never went to see about them until Monday morning, and to my astonishment I found all in pretty good condition. There had been only about 5 percent of the brood killed, and I saw no indication that any honey was gone, although Sunday was not a day for bees to gather honey. Many of the hives had been under water to 3 inches up on the super. As good luck would have it, all the covers were bad fitting, which gave the bees plenty of air and means of escape, which saved the apiary. The water stayed up an hour. One hive was completely washed out of the yard and turned over, yet suffered very little damage. I attributed the escape with so little injury to the fact that the water could not enter the cells, or did not. I am not afraid of a wash-out now, and the destruction of the bees, if they have a way of escape through the top of the hive, and something to climb to if the hives are stationary so that they will not wash away.

Bartlett, Tex. T. P. Robinson.

Moving Bees Short Distances, Etc.

I should like to have Mr. Scholl or some other practical apiarist here in the South, tell me the best way and time to move an apiary of 60 colonies a distance of 200 yards, with the least trouble and loss of bees returning to the old stand. This is an out-apiary some 14 miles away.

POLLEN AND HONEY IN JANUARY.

This so far has been a very dry as well as warm, open winter. There have been but a very few days that the bees have not been on the wing and gathered more or less pollen, with perhaps a scanty supply of honey. Jan. 8 they were gathering from two different sources—mountain cedar and mistletoe.

BEES IN THE BEST CONDITION.

The writer has never seen bees in the 18 years he has lived in this locality (Lampasas County, Tex.) in better condition than at the present time. They are moderately strong in bees, and extra-well supplied with stores. This is the result of the long and steady honey-flow from broom-weed in the late fall and early winter, which lasted, in all, over 2 months. The quality of the honey is not the best, but it is "legal tender" in a poor year for honey of a better grade, like the past season has been here.

SKUNKS TROUBLING THE BEES.

The skunks have been troubling the bees of one of my out-yards considerably the past month or two. I told the owner of the ranch about it, and he said:

"I never knew before that skunks in any way bothered bees. Although I have heard my little dog out where the bees are, barking for several nights, and had noticed the strong odor of the skunk more than once, I never thought of his skunk-ship depredating on the bees. I shall take my shotgun and go to the dog next time."

I have since learned that 3 of the little "varmints" have been killed on the spot, and there are still signs of others.

IT'S "FUN" TO HUNT BEE-TREES.

We have been having "lots of fun" and a plenty of "wild" honey on our table, this winter. The past season has been a great year for swarms, and a great many swarms have gone to the woods, with the result that many "bee-trees" are to be found. We go to the ranchmen here who own large pastures that are used for grazing various stock, and say something like this:

"Mr. Brown, we should like to have permission to hunt wild bees in your pasture. We will use every precaution against danger from fire while hunting and cutting the trees, for we well know the seriousness of getting these large pastures on fire these dry times when the wind is blowing a gale."

Then nine out of ten will say, "Go ahead, Mr. Smith, all we ask is to be very *careful about fire.*"

Then we saddle our horses when the day promises to be fair and warm, get feed for them, dinner for ourselves, and get our "bee-hunting outfit," which consists of a bottle of sweetened water made with honey, some old pieces of empty honey-combs, several large lumps of "slum-gum" from the wax-extractor and the "bee-hunting" box, and we are off to the woods.

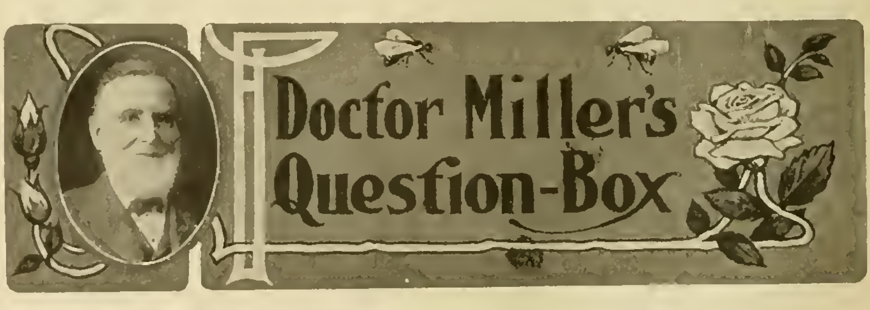
On reaching the spot we have reasons to believe wild bees are near, we tie or hitch the horse, select a clear place where no danger of fire to the owner of the pasture would be taken, build a small fire, lay on a lump of the "slumgum," put out the pieces of comb with sweetened water in them from the bottle. Don't allow the "slumgum" to blaze and burn up, but just keep it smoldering along to make all the smoke and scent possible. If bees are near they will soon be coming thick and fast, and will find the combs of sweetened water, and we will soon have a line started, possibly several of them, and by moving up the bait-combs on the line they can soon be lined to the tree or cave, in which they have their home. In this way we have found a number of trees this winter. We cut 2 very "rich" trees New Year's Day. We transfer all the straight worker-comb to frames, and save all the bees. In this way we have stocked an apiary of over 30 colonies this fall and winter. I hunt bees for pleasure and not for profit. As a rule, it is not profitable.

Rescue, Tex. L. B. Smith.

Several of my yards have been moved at various times short distances varying from 50 to 300 yards and more, and after trying a great many ways, I have of late years used the following one as the best and easiest, in my mind at least. The moving can be done at *any time* when the weather is not too hot and sultry. The entrances of the hives are stuffed with moss, or green grass, or weeds are preferable, early in the morning, before any bees have gone out.

Wait until the day has warmed up, until 10 or 11 a. m., and then haul the colonies to the new stands, handling them roughly to stir them up well. When all are moved, use a smoker to smoke at the entrances, which are now all opened so only one bee can pass at a time, by pulling the weeds slightly at one side of the entrance.

The bees are much stirred up and would rush out, but are kept from doing so by the smoke and the very small entrance. This causes them to come out with some difficulty. They notice their new location, and do not rush off to the old one, thus saving the usual loss of returning bees. The green grass or weeds will soon begin to wither and dry up, and is in due time removed by the bees, allowing them the full use of the entrance without further attention from the apiarist. It is the cheapest and most easily obtained at almost all times, here in the South, and when not dry, grass or moss works just as well. It is "just the thing" for such moving at out-yards, etc.



Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Bee-Spaces in Hives—Color of Italian Queens.

I began last spring with one colony in a regular dovetailed hive, increased to 5 colonies, and got 100 pounds surplus, which, for a beginner, I think is good enough to blow about. But I guess "location" counts for a great deal. The hay meadows are thick with dandelion. The railroad right of way, ¼-mile from my colonies, is a jungle of sweet clover, and I have 40 acres of alfalfa. My experience, however, is that alfalfa is *second* to sweet clover, or else this year was an exception. The sweet clover just hummed with the bees all summer, while very few were seen on the alfalfa, though some of it went to seed. I have some troubles. That is why I write the "Trouble-mender." I got along making nuclei, and successfully introduced a queen. But I killed bees and was *awfully* bothered with propolis. I killed bees in putting on supers and covers, and, in taking off a top super, I tore up parts of sections in the lower super, and some brood-frames were stuck fast to the section-holders of the lower (or first) super, and lifted up with it. I don't think my hives are properly bee-spaced, or else our dry climate has shrunk them.

1. As I understand it, a square laid across a hive should have a ⅜-inch space left between it and the top of the frames. Is that right?

2. Should there also be a ⅜-inch space *above* the tops of the sections in a super? If not, how can I prevent the sections being stuck fast to the section-holder above?

3. If there should be a bee-space above the sections in a super I have been thinking I could remedy that in my supers by using T-tins, as they would eliminate the section-holder bottom (¼-inch thick); but how about the section-holder ends? Without them four 4¼ x 4¼ sections won't reach across the super by an inch, unless the T-tins are made of sheet-iron, and take up some space, and if they do take up space and crowd the bottoms of the sections apart, isn't there a space left between the tops for bees to daub propolis in?

4. How high up between the sections do your T-tins come? and don't you have to saw a place for them in the separators?

5. I am told that "the color of a queen has nothing to do with the bees she will rear;" that "pure Italian queens may be yellow, leather-colored, or jet black, but their bees will be yellow." Is this so?

6. My nearest bee-keeping neighbor is 1¼ miles. If I stock up with Italians, is there much danger of my queens being fertilized

by his black drones? I use full sheets of foundation, and have very few drones. He uses only starters, and I saw whole frames in his hives that were built out solid with drone-comb, except 2 inches where the starter was. He had 6 colonies, and got no surplus. They swarmed as soon as they got a half gallon of bees in a hive, and I don't want any of his stock, but would like to rear most of my own queens. Two of those I reared were larger, and better layers than the one I bought. Nebraska.

Answers.—Location or no location, you have a right to brag of your success, especially if all 5 colonies are strong for winter.

1. One-fourth inch is the better space. But shrinkage may bring ⅜ down to ¼. With ⅜ too much bur-comb is built in.

2. In some way a bee-space must be provided between any 2 stories. There may be a space at the lower part of each story, or a half-space at both the bottom and top of each story, but the usual way is to have a space at the top. The hive must furnish a bee-space at the top, and each super the same. Without such space at the top of the super you'll have trouble galore with glue.

3. You can easily make the length of the super all right for T-tins by tacking a block or board in one end, or a thinner board in each end, leaving the inside length of the super 17⅜ inches. You wouldn't like sheet-iron T-tins to fill up the space.

4. Some of my T-tins are ⅜ and some ½ inch high. Either does. No place is sawed in the separator, which rests directly on the T-tins. It would be bad to have the separator come down lower.

5 That's not so very far off from the truth. Some of the best Italian queens are quite dark, although their workers are yellow.

6. The probability is that your neighbor's drones will be obliging enough to meet most of your queens. Can't you get him to change to Italian blood?

Eight and Ten Frame Hives.

I would like to know when to use an 8 and a 10 frame hive, and what is the advantage of each? Wisconsin.

Answer.—Perhaps no one thinks of using anything less than a 10-frame hive for extracted honey, and some even want something larger. The question as to the choice of the two relates only to comb-honey. If you are going to give only ordinary care to your bees, a 10-frame hive is the safe thing. More room for winter stores, hence less danger of starving in winter, and more particularly of starving in spring. But some who give fullest attention to their bees prefer an 8-frame hive, partly because they want something smaller, and partly because they want something larger than a 10-frame hive. Early in the season, when bees are building up, a queen may need more than 10 frames, and then a second story can be given to the smaller hive, making 16 frames. Then when the harvest comes, one story can be taken away, and only 8 frames left for the queen, the rest of the room being in supers.

Rearing Queens—Italianizing.

I commenced July 1, by purchasing a colony of Italians; a few days later a small after-swarms of hybrids; then I caught a runaway black swarm; and by dividing and buying queens, I now have 5 good colonies—3 pure-bred and 2 hybrids.

I fed 4 of them some in September, and they are all now well stocked for winter. The fifth was started July 15, with 2 frames of brood and honey, and about a gallon and a half of bees. With no feeding it filled the 6 other frames, having full foundation starters, and stored 16 sections in the super. These were not fed because they seemed to be working strong. This is the colony that I am anxious about. I never knowingly saw the leather-colored Italians, but think this is that kind. I would like to requeen from this colony, but there are so many black bees about me that I fear I shall not get many pure-bred queens.

1. What percent of pure-breds could be counted on if I place my bees a mile from other bees?

2. How would it do to get some queen-breeder to take my queen and pay me in her progeny?

3. How many untested queens from her eggs should I have for the queen?

It was so dry after I started this colony, and so little honey-flow, that I think she is a great queen.

4. I have a hybrid colony that did not work well. Should I put in another queen early in the spring, or wait until after the honey flow? Which will probably pay best? Missouri.

Answers.—1. Possibly 25 percent, possibly 5 percent.

2. That would almost certainly give you more pure matings.

3. That's altogether as you can arrange with the breeder. He might set a very high or a very low value on your queen, which would make a wide difference.

4. Likely it will pay best not to make the change till the flow is well along.

How Many Colonies for a Certain Field?

From reading the bee-papers and text-books on bee-culture, I know it is no easy matter to say how many colonies of bees a location will support, but I would like to have you give your opinion o. the following.

Could I keep 75 colonies *or more,* on a range that furnished an abundance of early pollen from willow, hazel-brush, elms, and other sources, followed by fruit-bloom and dandelions; about 40 acres of alsike clover, grown for seed; white clover, which springs up abundantly along roadsides and in all pasture lands; and lastly, if all the basswood scattered through the timber here were collected into one lot, a conservative estimate would put it at from 140 to 160 acres of a fair stand of timber? We also have enough fall forage to keep bees busy, and some seasons to gather some surplus. All land is occupied, the farms averaging about 100 acres here, and all have a fair-sized upland pasture with the grazing area being increased yearly.

Judging from the above, how do our locations compare in white clover? I understand you depend upon this source alone for your surplus. Minnesota.

Answer.—If there are no other bees within 2 or 3 miles of you, it ought to be a safe guess to say you could keep 100 colonies or more. Hard to say how your white clover compares with mine. You have white clover in all pastures, but how much of the land is occupied with pasture? Here dairying is the chief interest of all the farmers with scarcely an exception. "Elgin" butter, you probably know, looms large in the market, and more Elgin butter is made here than at Elgin. But even if I have more clover than you, I'd be glad to swap the extra amount for your basswood, and pay you something to boot.

Disagreeable Hive-Odor.

I have just read an article on page 306, "A Buckwheat Story." During the latter part of this season I had very much the same experience as the "farmer bee-keeper." We have no buckwheat in this country, and no disease of any kind that I know of. My bees are all in very good condition. We noticed a strong, disagreeable odor coming from our bee-hives, especially in the afternoon and evening. My wife kept insisting that something was wrong. "Foul brood, more than likely." I examined hive after hive and opened cells in all, but conditions were always the same. The hives and combs were all clean, brood in a healthy condition, and plenty of it.

I finally gave up my search for the cause, believing that it was due to the odor of the honey, which was quite dark, although to hold a comb close to the nostrils nothing disagreeable could be detected. It puzzled me " a right smart." I have 3-banded Italians. Can you give any light upon the cause. Louisiana.

Answers.—Your "believe" in the case is about right. There are times when certain kinds of honey give out a very disagreeable odor that pervades the air of the apiary, although, as you say, you cannot locate it easily. Fortunately it does no harm, and doesn't last long. A worse affliction is the carrion plant, with which I've had some trouble—a sort of fungus or toadstool that smells like a dead animal, and is not very easy to find.

Making Increase of Colonies.

1. I asked some questions last spring, page 152. I told then how Mr. Doolittle bothered me. Now, I don't know as you know it, but you have bothered me, too. This is what bothers me: I read what Mr. Alexander said in Gleanings in Bee Culture, page 423, and I thought I would make my increase that way, until I read what you said in the American Bee Journal, page 85, and then I decided to ask you how I would best make increase and in your answer you said, "One way is to put all brood into an upper story over an excluder, leaving the queen below, then a week or 10 days later set the upper story on a new stand, giving it a queen or ripe queen-cell." In what way does this differ from Mr. Alexander's way? And didn't you say, page 85, fourth answer, "No, not for me, and probably not for one in a thousand in the North?" If my bees winter well this winter, I believe I will try one colony Mr. Alexander's way.

2. In the November number, page 344, you say, "drum out a swarm, hive it in a new hive, and set it on the old stand, changing No. 1 to another old colony, No. 2." I find this is practically the same way as given in "Langstroth on the Honey-Bee," page 242, by Dadant & Son. Would this method give as good queens as those of any other method? Of course I would use the brood from my best queen. Maine.

Answers.—1. Evidently things have become mixed, and I'm the culprit to blame for the mixing. Let me try to straighten it out. Mr. Alexander gave as a plan to increase the crop to divide each colony before the harvest. That I do not consider a good way to increase the crop "for me nor for one in a thousand in the North," although the plan he gives for making increase is good. If you want to try that plan of increase of bees, you will find it works all right; but if you expect it greatly to increase your crop of honey, as recommended by Mr. Alexander, you will probably be greatly disappointed. As I think I stated, Mr. Alexander depends mainly upon buckwheat, and he can double his colonies and have 2 full colonies from each to work on buckwheat, so the plan is all right for him or for bee-keepers in the South who have late harvests; for me, and almost certainly for you, it's another story. But the plan of increase is all right.

2. The plan mentioned should give queens of best quality if worked when there is a good yield of honey, for the cells are started and the queens reared in a full colony.

Caucasian Bees—Requeening.

I see on page 338 an article on Caucasian bees, by J. J. Wilder, of Georgia. He says that they winter well. That might well be there, but not in this latiude.

1. Do Caucasians winter well in the North?

2. Do they resist the moth as well as the Italians?

3. Are they inclined to fasten their combs together?

4. Which would you advise, requeening with Italians or Caucasians?

I have now 8 colonies of common black bees. I wish to requeen at least some in the spring. My average this year was 24 sections, although I had one colony which stored 60. This was my second season. I started with 3 colonies and have lost 3. I have a friend who purchased a 3-frame nucleus last spring, and it built up on foundation and stored some surplus. So I am inclined toward Italians.

I like the bees very well. I am 17 years old. Perhaps I can make something of a bee-keeper of myself. New York.

Answer.—I'll not attempt to answer your questions categorically, chiefly because I don't know enough. I have had no personal experience with Caucasians, and only know about them from the reports of others. These reports are so contradictory, and some of them so unsatisfactory that I don't care to introduce any of the blood until there seems to be something more firmly established as to their general character. If I had black bees as you have, I should get pure Italian blood, breeding always from the best, and trying to keep the stock pure. I didn't do that myself, but that's what I would do if I had it to do over again.

Repressing Swarming—Alternating Hives.

1. How can I repress swarming to the best advantage in producing comb honey?

2. Would it pay for me to change queens in the spring to get out the swarming blood?

3. If the queen of a colony has swarming blood, will all swarms going out from that colony be of the same nature?

4. I am an amateur at the bee-business,

having started about the middle of last summer with one colony of Italian bees, in a 10-frame alternating hive. I bought them just after they had swarmed, and they stored enough honey for their use this winter. About 11 o'clock on September 25, they swarmed again with a medium-sized swarm. I went over to our bee-supply dealer to get a hive and he had nothing left but a Massie hive, and said if I wanted to change it for an alternating hive in the spring, I could. Which would you advise me to choose for my hive?

5. I fed my late swarm of bees about 20 pounds of granulated sugar in as much water, with a Miller feeder. They gathered what little honey they could. Will that be sufficient to keep them in good trim this winter?

I have been taking the American Bee Journal and enjoy it immensely. I would not do without it, as it brings up so many good points of interest to bee-keepers. IOWA.

ANSWERS.—1. I don't know. I've been trying for some 40 years to find out what is the best way for me, and am still trying without having the question fully settled. Even if I knew the answer for myself, I might not know the answer for you. In "Forty Years Among the Bees" I've tried to give my whole method of procedure, but it would take pages of that to tell the story, and then, as I said, it might not hit your case.

2. Might be. W. Z. Hutchinson practised introducing each year young queens obtained from the South, and the plan was a success in preventing swarming. But the plan did not succeed with me, although when the young queen was reared in the colony itself that colony could pretty surely be counted on not to swarm. Still, I had exceptions.

On reading your question the second time, and especially reading the question following, I think you want to know whether by introducing new blood you may get bees less inclined to swarm. Yes, it is possible that your bees are unusually bad about swarming, and that you might get in new blood with less inclination that way.

3. The royal daughters of a queen are by no means sure to be just like their mother, but if the mother is badly given to swarming you may count on a general disposition that way among her daughters.

4. The great majority seem to prefer a 10-frame dovetailed hive, although some who can give very close attention to their bees prefer an 8-frame dovetailed hive.

5. Yes, but keep a sharp lookout next spring after brood-rearing begins, for then is the time when stores are used so rapidly that they may run out before you know it.

Transferring Bees from Boxes.

I have 2 colonies of bees caught in the woods last summer. They are at present in 2 cracker-boxes, wintering on the honey they stored up during the summer. I should like to get them into a frame-hive in the spring as early as possible. When is the best time, and what is the best way? CONNECTICUT.

ANSWER.—You would only lose by trying to make the change too early. Generally no one thinks of transferring from a box-hive to a frame-hive before the time of fruit-bloom. Latterly the plan preferred is to allow the bees to swarm, hiving the swarm in a proper hive, setting the hive on the old stand, and then 21 days after the issue of the swarm to break up the old hive, adding the bees in it to the swarm. By that time all the brood will be hatched out except perhaps a little drone-brood, and the old combs can be melted up.

Comb Honey Without Separators—Folding Sections—Wiring Foundation.

1. In producing comb honey, can the supers be used without the fences or partitions, or separators, between the rows of sections?

2. How should I manage the sections? Must they be wet before bending, or bent dry? I see a hand-machine advertised for bending them. Would you advise the use of one, or bend by hand?

3. Please expain how foundation is wired for brood-frames. Do you fill the entire frame? I enclose drawing to explain the way I saw some put in. It was fastened to the top-bar with wax. There was about ¾ of an inch left on each side and at the bottom, with the corners cut off. KENTUCKY.

ANSWERS.—1. If you are producing a few sections that you do not expect to ship, you may get along without separators of any kind. If they are to be packed in a shipping-case, separators are almost indispensable.

2. Sometimes sections can be put together all right without wetting; generally too many of them will break unless the joints are wet. If you have many sections to fold, you will find it better to have some kind of a section-press.

3. Quite commonly foundation is fastened in by 3 horizonal wires, although some prefer 5 vertical wooden splints. It costs less for foundation in the first place if the corners of the sheet be cut away in the way you sketch, but it is an extravagant way in the long run. The bees are sure to fill in the vacant spaces with altogether too much drone-comb, and you can hardly afford to keep so many drones. I never feel I can afford to keep so many drones. I never feel I can afford to have less foundation than to fill the entire frame.

Wind and Nectar-Secretion—Sowing Buckwheat—German Bee-Paper.

1. I have read in a farm paper that flowers do not yield nectar when there is a south or east wind. Is that true?

2. I have 6 colonies of bees, and intend to sow an acre of buckwheat for them so they can dig into it after clover bloom. What time should I sow it, and into what soil?

3. Is there a German bee-paper published either here or in foreign countries? MINNESOTA.

ANSWERS.—1. I don't think it is, although the direction of the wind may have some influence.

2. About the first of July is a good time. Buckwheat is not very particular, but will do better on fairly good soil.

3. No German bee-paper is published in this country, but a number across the water, among them Schweizerische Bienenzeitung, Praktischer Wegweiser, Leipweiser Bienenzeitung, Bienen-Vater, Deutsche Imker aus Boehmen.

Noises Over a Bee-Cellar.

1. If bees are put into a cellar under the kitchen, would the noises incident to the kitchen-work—running a washer, bringing in wood, constant walking, etc.—be a detriment to the bees, provided the hives were not jarred by any of these various operations? Or would a cellar under a parlor be better, where it would be quiet most of the time, with an occasional day or evening when there would be considerable noise above the bees, but no jarring of the hives? Or would the position beneath the living room where there is a piano be better than either of the others? MICHIGAN.

ANSWER.—I can not speak with entire positiveness; but I have never noted any bad results from noises overhead (although I never had anything very bad in that line), and never heard of it from others; so I don't believe you need take into account the matter of noise, but put your bees in the place that gives you the best temperature and ventilation, providing there is any difference.

Transferring Bees—T-Super.

1. I have bees in a box. I wish to put them in hives to drive out a swarm next spring. Then in 21 days I want to take the box for another swarm. How far will I have to take the first from the old stand? My plan is to smoke and then drive them by knocking on the box.

2. What is the difference between the T-super I read about and others? I bought some bees in Root hives. The supers have 24 sections with fences between them. The supers of that size will fit any hive which I make myself. They are the size of the ones I see advertised. Please give price and where to buy the T-super, and any information you can. I have never produced comb honey. KENTUCKY.

ANSWERS.—1. The distance is not important, although it makes a difference whether a hive stands alone or is surrounded by others. If other colonies are near, 6 feet is far enough to move it; if it stands alone, a rod is better.

2. The chief difference between the T-super and other supers is that in the T-super the sections are supported by supports of tin having a horizontal lower part on the center of which stands an upright part, making it in the form of an inverted T. These T-tins are loose, and make a very strong support which at the same time takes up almost no room. You will find the T-tins advertised in supply catalogs at a little more than a cent apiece (it takes 3 for a super), but strange to say the supers themselves do not appear. You can, however, have them made to order, and they ought to be the cheapest of all supers, being so simple. In the reply to "Pennsylvania," on page 19, you will find instructions for making it yourself.

Likely Laying Workers.

Today I was surprised to find drones flying from one of the hives. The day being pleasant, I made an investigation, and discovered plenty of bees and stores, and an average number of drones of good size and color, as in mating season. There were a number of eggs in cells, principally in drone-cells, sometimes 2 eggs in a cell. No young brood. I did not find the queen, but there is a capped queen-cell of fair size which will open in about 7 days. The queen was from the season of 1908, and is of dark Italian stock. This is a case of supersedure.

Did you ever learn of a like experience at this season of the year? LOUISIANA.

ANSWER.—Your statement that eggs are "principally in drone-cells, sometimes 2 eggs in a cell," makes it pretty certain that you have a case of laying workers, unfortunately nothing very unusual. If my guess is correct, you will find that the queen-cell will never hatch, and if you open it you will find a drone in it. There is a possibility of a drone-laying queen, but more likely laying workers.

Choice of Locusts.

In your locality, which would be your choice of the locusts as a honey-plant—*black* locust of *honey* locust. SUBSCRIBER.

ANSWER.—I don't know which is best. Who does?

Introducing a Virgin Queen.

I dropped a virgin queen on a frame of brood in a queenless colony July 1, and looked 4 days later and found the queen present. In 10 days I looked again and found one frame with eggs. Thinking all O. K., I did not look for 21 days. I then found the same frame filled with brood with only a few cells containing pap applied to one side of the egg. In a few days I looked again and found eggs as before, with pap at the side of the eggs, but no eggs hatched. I left the brood several days more, but no eggs ever hatched. Even though this queen might have been a drone-layer why did not the eggs hatch? The eggs were large, developed eggs, not worker-eggs, as she laid in a mating-box after being placed there. MICHIGAN.

ANSWER.—I had one case at least, and other cases of the same kind have been reported, in which the queen laid, but no eggs hatched. I don't know why. The unusual thing in your case is that the queen at first laid eggs that hatched (for you found brood present 35 days after giving the queen), and later no eggs hatched although fed by the workers. I never heard of such a case before, and can give no explanation.

Beginner's Questions.

1. Where one is running for honey, is it best not to let the bees swarm?

2. What is the best way to keep bees from swarming, where one is too timid to cut out queen-cells?

3. After a queen is mated to the drone, does she remain in the hive all summer, or does she come out for a flight? If so, how often?

4. If I have a hive full of crooked combs, and do not wish to cut them so as to get at the queen to catch her in order to introduce a new queen, how would it do to set a queen-trap for her?

5. Are queens always shipped in introducing cages? That is, where a person buys the queens from a practical bee-man?

6. If you were going to start over again with bees, laying all prejudice aside, what kind would you prefer?

7. In buying a full colony of bees from a practical bee-man, does he send a made-up colony, viz., a few bees, brood, and some honey from several colonies, or a colony that has been working together for some time?

8. I am thinking of getting a start of pure Italian bees, but I have a neighbor who has

the common black bees. He lives half a mile from me. Do you think they would mix that far with my Italians? MISSOURI.

ANSWERS.—1. Yes, if you can.

2. I don't know of any way for him to prevent all swarms, but I'll tell you how he can generally prevent all after-swarms. When the prime swarm issues, hive it and set it on the old stand, with the old hive close up to it. A week later move the old hive to a new place distant from the old stand 6 feet or more. That's all; the bees will do the rest, and you will generally have no second swarm.

3. After leaving the hive for her wedding flight she is not expected to leave it again all her life, unless she goes out with a swarm.

4. I don't see very clearly what you're trying to get at. I suspect from the previous question that you have an idea that the queen comes out now and then, which she doesn't do. The only time you would trap her would be when she takes her wedding flight, or when she swarms. You would hardly find it satisfactory.

5. Yes.

6. Not so sure about the prejudice part, but I know I'd start with Italians.

7. He would probably send one that had been in existence for some time as a full colony; although I don't know why the other might not be just as good.

8. Yes, you can bank on it.

Transferring from Frame Hive.

I have a colony of bees in a home-made hive. The hive is not quite as large as an 8-frame hive. How would you transfer them into an 8-frame hive? When is the best time to transfer? IOWA.

ANSWER.—Wait till the colony swarms, hive the swarm in a proper hive, setting the swarm and the old hive close together, and 21 days later cut up the old hive, add the bees to the swarm, and melt up the old combs. Or, if you want to have another colony, at the end of the 21 days transfer from the old hive into a new hive, according to instructions for transferring in your bee-book. Another way is not to wait for swarming, but to transfer from the old hive in fruit-bloom.

Clipping the Queen.

In clipping a queen, what wings should be cut off, and how much should be cut off? How should I hold her to clip her wings? Last Spring I bought a colony of bees on May 13. They swarmed, and then on the 11th day they swarmed again. I had bad luck. They both got away from me. The first 3 or 4 days before the first swarm they stored 2 or 3 pounds of honey, and then came out and left. MARYLAND.

ANSWER.—It doesn't matter much how you do, so the queen can't fly. A queen has 4 wings, a big one and a little one on each side. If you cut off one of the big wings, that's enough to stop her flying, but when you get a mere glimpse of such a queen as she runs, it is not so easy to tell whether or not she is clipped as when both wings on one side are taken off. I'll tell you how I clip a queen. I hold her between thumb and finger of the left hand, not by the abdomen or soft part, but by the thorax, the hard part that is between the head and the abdomen, with her head looking toward my left, and then with a pair of gentlemen's pocket scissors I cut away as much as I conveniently can (generally more than half) of the two wings on one side.

Getting Increase of Colonies.

1. I am just starting in with bees. I bought 2 colonies of Italians with the honey, so I think it would be best for me to try to get as many swarms as I can. How can I do it? They have 2 supers to the colony, one on top of the brood-chamber and one under, and they are loaded with honey. I was thinking of taking off the supers and cutting them down to the brood-chamber so I would get more swarms. Will it work all right? I think it will not be wise for me to shake or brush swarms until I know more about bees.

2. I think it will be best for me to get queen-cages for the hive. When should I put them on, or can I just put them on and leave them all the time? I know how to handle bees in swarming time, for I have had one colony of black bees for 4 years, but can't get any swarms, and when they do swarm I can't keep them. I will hive them, and the next day they leave me. So what is wrong? I will have the frame-hive now. KANSAS.

ANSWERS.—1. You will probably get as many swarms as you want, or at least as many as it is profitable to have, if you let the bees swarm naturally, not moving the old hive, and putting each swarm on a new stand. The bees will be more certain to swarm if you remove one or both supers, as a large amount of room tends to limit swarming.

2. I'm not just certain what you mean by having queen-cages, but suspect you mean to have queen-traps to put on the entrances of your hives so the queens can not abscond with the swarm. That is hardly necessary, and in some cases might not work satisfactorily. It's a pretty safe guess to say that your trouble from having all your swarms leave comes from too much heat and lack of air. When you first hive a swarm, let the hive be raised from the bottom so as to allow plenty of air, and also let the cover be partly open. It will do no harm if an opening of 2 or 3 inches is left at the top for the first week. If the hive can not be set in a cool, shady place, shade it in some way. A big board held down by a stone on top will do. Also, a perhaps better shade is made by an armful of long grass on top and held down by 2 or 3 sticks of firewood. Some prevent swarms from absconding by giving each swarm a frame of brood.

T-Tins in Supers.

I am informed that you use nothing but the T-tin in your comb-honey supers. It looks to me that they should be the best all around, but they say that the weight of honey will make the tins give or bend. What is your experience? The bees glue the wood-holders very tight in this locality. The wood separators are also troublesome. MISSISSIPPI.

ANSWER.—Whoever they are that "say that the weight of honey will make the tins give or bend," it must be that they have never seen a T-tin, or else they are poor judges of the strength of ordinary tin. On the contrary, it would take a much greater weight to bend a T-tin than to bend any wooden support in use in supers. Remember that there are two thicknesses of tin standing ½-inch upright. I have had 3,000 T-tins in use for many years, and have never known one to be bent the slightest by the weight of honey. It would probably be all the same if the honey were 5 times as heavy.

Southern or Northern Queens.

1. Do you consider it advisable to send South for a breeding-queen to rear queens for my own use in an apiary of 50 to 60 colonies, or would you consider Northern-bred queens superior? My object in sending South would be to get a breeder cheaper.

2. Would you advise having her mailed, or sent in a nucleus, in order to have her arrive safely?

3. Would I be safe in depending upon a Northern queen-breeder to furnish a breeding-queen by May 1 to 15, or in time to rear queens from her for early increase the same season? or would I have to wait for them to rear young queens to take the place of breeders as sent out? PENNSYLVANIA.

ANSWERS.—1. Other things being equal, I don't see why it should make any difference whether a queen is reared North or South.

2. I should have the queen mailed in a shipping-cage. The other way is too expensive.

3. Yes, you would be safe if he agrees to send one as early as that. For you probably intend to get a tested queen as a breeder, and he could send you one reared the year previous. If you mean to buy an untested queen, I wouldn't want one reared in the North as early as May 15.

Solar Wax-Extractor—Uniting Weak Colonies in Spring.

1. I think it would be an impossibility for me to get along without the American Bee Journal. I think it fills the bill in every respect, although there are some things a person would like to know that I have not noticed in the Bee Journal. One of them is how to make a solar wax-extractor without much expense. Does the solar wax-extractor take out all the wax, especially out of old combs?

2. How would it do to unite weak or light colonies of bees in the spring, immediately upon taking them out of the cellar, and let them mix while taking their cleansing flight, and let the queens settle their part of the question; then after a few days drive the bees below, and put below what honey is in the upper hive? IOWA.

ANSWER.—1. Any kind of a box, and of any size, covered with glass, so placed that the rays of the sun shall shine directly into it, will become hot enough on the inside to melt wax. A single pane of glass will do if large enough, or a common window-sash may be used. To hold the pieces of comb to be melted, you may have a plain sheet of tin, slanting 1 to 3 inches (according to the size of the box) from rear to front, so that the melted wax will run down into a vessel that you will place under to catch the wax. Or, you may use a sheet of wire-cloth, so the wax will run through. This will work very nicely with cappings and bur-combs, but a good deal of wax will be left in old brood-combs. Especially will this be so if one brood-comb lies over another.

2. That will work all right, only it is better to do such uniting in the fall, for two weak colonies will winter better united than separate. Even when you have united in the fall, there may turn out some weak colonies that should be united in the spring, and then your plan will work.

Rearing Queens—Selling Bottled Honey.

1. By taking the queen away from a strong colony of bees in the midst of a good honey-flow, and allowing the bees to build queen-cells, would you get as thrifty, long-lived, prolific queens as from cells built under the swarming impulse, or artificial means?

2. What do you think of the plan of bottling honey and making it an expensive luxury so that the consumer can just taste of it occasionally? Would there not be more of the spirit of "loving our neighbors as ourselves" to cut out the middle system of bottling, and sell it to him at a figure so that he can make it an article of every day diet? In the long run, would there not be more dollars and cents for the bee-keeper? NEW MEXICO.

ANSWERS.—1. Yes, especially if you give to your queenless colony a frame partly filled with freshly-built comb containing eggs and young brood. At least that is my private opinion, based upon a good deal of experience with the different kinds of cell-rearing, only I have not had much experience with natural-swarming cells. Yet some, perhaps many, hold different views.

2. The way to do is to sell honey in as large and inexpensive containers as possible, so as to make as little expense as possible for each pound sold. That ought to give the consumer the most honey for his money, and the producer the most money for his honey. Unfortunately, however, we are often controlled by conditions and circumstances. A large part of the consuming public are in the habit of buying in small quantities. A Chicago retail grocer who should keep honey only in 20 to 60 pound packages would probably sell very little honey, whereas plenty of customers will buy a pound at a time, even if they must pay for a bottle of no value to them. What better can he do than to keep the small packages?

Experience of a Beginner.

1. I purchased a colony of bees in the spring of 1907. This colony cast 2 swarms the first season, and from this colony and the first of the new ones, I took off one super each of comb honey, and the other about 2-3 of a super. The old colony weighed, with brood-chamber only, 76 pounds. The 2 new colonies weighed, respectively, 55 pounds and 37 pounds. I wintered them in my coal-house. I know practically nothing about handling bees or examining them, so in the spring I put them on the stands again and awaited results. Last spring the old colony again cast 2 swarms which I secured. In the fall when I took off the supers to put them into winter quarters, I got from the first new swarm about 25 pounds of comb honey. But when I took off the super from the second new swarm I found there had been nothing doing. I then examined the hive-body, and found it deserted, with an amount of comb left behind which would indicate about one week's work. What was the cause? The hive was a new one.

2. When I came to put in the 3 old colonies, I found only about 10 pounds of comb honey in the 3 supers combined. Why this

dearth of honey? There was at least 2-3 of the sections that showed no comb construction. What was the reason? The old hive, which the year before had weighed 76 pounds, now weighed but 64 pounds. Of the other two, one weighed about the same, and the other about 10 pounds heavier. I would like to know my mistakes, and the remedy.

SOUTH DAKOTA.

ANSWERS.—1. I can only guess, and the first guess that comes when a swarm deserts after having made a start at building is that there was too great heat. The remedy is to shade the hive and give plenty of ventilation by a large entrance, or some other way.

2. I am not sure whether I understand correctly, but as I understand it, you left the supers on till time to go into winter quarters, and then found less honey in them than there had been previously. There was nothing unusual in that. If supers are left on after the harvest closes, in a little while the bees will begin to carry the honey down into the brood-chamber. Next time take the supers off when the harvest is over. There are various reasons for difference of weight in different colonies, and of the same colony in different years.

Keeping Honey—Extracted vs. Comb Honey.

1. Can honey from this year be kept till next year without spoiling?

2. I have a notion to run my apiary for extracted honey. Is there more profit than running for comb honey?

3. What book can I buy that explains the work about extracted honey? ILLINOIS.

ANSWER.—1. Yes, there is no trouble in keeping extracted honey over, and even comb honey may be kept in a dry and warm place.

2. Some find it more profitable to run for one kind of honey and some for the other. It depends upon kind of honey, markets, etc., and a good deal depends upon the bee-keeper.

3. Root's "A B C and X Y Z," Dadant's "Langstroth," Cook's "Manual," or almost any of the other books on bee-keeping ought to help you out.

Probably Mostly Italian — Giving Queen vs. Superseding.

1. What kind of bees are the enclosed?

2. Do bees that requeen themselves do as well as bees that are given a new queen? and what becomes of colonies that are not interfered with in the least, except to put on supers, take off the surplus honey, etc.? Is that a good plan, or is it necessary to requeen to obtain best results?

A BEGINNER.

ANSWERS.—1. It is not easy from seeing a few bees to tell what they are. The first cross between black and Italian blood will show workers all the way from those having 3 yellow bands to those having none, so if you should show a few of these with 3 bands to the best judge in the world, he couldn't say whether they were pure Italians or hybrids. Besides, when bees are sent flat in a letter and mashed in the mails, it is still harder to tell. I should guess that the bees you send are mostly Italian blood.

2. If bees are of the right kind, it is all right for them to requeen themselves. I'd give money if my bees would never swarm and leave me to do nothing but to attend to the supers. I'd be glad to leave the requeening to themselves.

Starting in the Bee-Business.

1. How many colonies could I *safely* manage the first year? The limit.

2. The first year I shall have to buy my colonies, and they may be had in all sorts of hives, getting them somewhere in this community. But the new swarms, etc., I desire to start in the *best* hives. How many hives ought I to have on hand, to have each one fully equipped for a good season?

3. Where can I get *one* hive fully set up as a sample, from bottom-board, hive-body, Miller frames, super, etc.? When can I put in my order, and for the balance I shall need in the flat ready to set up, according to sample?

4. What other supplies shall I need, as smoker, tools, sections, foundations, etc.?

5. About what will be the total cost?

I want to go into the business for pleasure and profit, too. IOWA.

ANSWERS.—1. You've asked too hard a question, and I wish I could refer it to some one else. Generally, it is not a hard question to answer, the orthodox answer being to commence with 2 or 3 colonies. With that number you can't lose very much, no matter how many foolish things you do with them, and you have a lot of practice with 2 colonies. Generally, too, there is only a little time that can be taken from other pursuits, and these latter can not be intruded on too much. Your case is different. Most of your time will be at the disposal of the bees, and some of it would not be fully occupied with only 2 or 3 colonies. Also, you have been doing some advance study that fits you for undertaking more than the average beginner. I've an idea, too, that a retired preacher is safer than the average to trust with bees. So I'd venture the guess that you'd be quite safe with 25 colonies, and even though you might make some bad work with a larger number, might gain enough additional experience with 50 to pay for all the mischief you'd do with them.

2. That depends. If you start with 10 colonies, get 3 new hives for each colony. You will possibly have 2 swarms from each colony, and you will want to transfer from the old hive. If you don't need them all, they will be good for another year. This with the idea that you will care more for increase than for honey. If you start with 25 or more, get 2 new hives for each colony, counting on doubling your number and getting a fair crop of honey.

3. If you had left out that Miller frame, I'd have said from any supply dealer. I'm not sure that any one makes the Miller frame but the G. B. Lewis Co.

5. You've made out a pretty good list, and you'll want a veil, and—but say; I tell you what to do: write for a catalog to each one of the supply-dealers that advertise in this journal. You'll tell then better than I can tell you what you best have, as also the cost, and you'll be interested in looking them over.

Effect of Tarred Paper on Bees—Foul Brood.

1. Is tarred paper injurious to bees and honey?

2. What is foul brood, and what are some of the methods of curing it?

Perhaps these questions seem silly, but I am only a boy 14 years of age, and know hardly anything about bees, and have only 2 colonies, so need the coaching of an experienced apiarist. MASSACHUSETTS.

ANSWERS.—1. Not in general. If honey were kept for a time directly in contact with paper strongly impregnated with tar, it would probably hurt the flavor, but wrapping tarred paper about a hive would not produce any such result.

2. Your question is one of exceeding importance, and if you are wise you will not rest satisfied until you are well informed as to foul brood, for at any time it may come to pass that foul brood, or something that you fear is foul brood, may appear among your bees, and you should be ready for it. But there is not room in this department to tell you all about it, and you will find much upon the subject in back numbers of this journal, as well as in most of the books devoted to bee-keeping.

Changing Bees on Home-Made Frames to Hoffman.

I have 5 colonies of bees in standard 8-frame hives. Three of them have home-made frames of common lath, and the combs are bulged, and very uneven. Which would be the best way to change them in the spring without setting them back too much? I would like to give them proper frames. Would I have to break up the colonies in order to change them to Hoffman frames? I am wintering them in the cellar, and have 4 thicknesses of burlap over them. They seemed to be doing well until now, but with the way the frames are I can not do anything with them, without tearing the combs to pieces. They were that way when I bought them last spring. I had 2 swarms last summer, but no surplus. They seem to have plenty of stores to carry them through. MINNESOTA.

ANSWER.—What is to be done depends upon what shape the combs are in. It may be that they are somewhat bulged and uneven, and yet so that by a little cutting they can be straightened out all right. In that case, as the combs are probably of the right size, they can be cut out and put into the right kind of frames without setting back the bees at all. Do the work at the time of fruit-bloom, when bees are busy at work, and will rapidly mend the cut places. If the combs are built crooked in the frames, so that you can not get them into good frames, then wait till the bees swarm, and 21 days later you can cut out the combs and melt them up.

Transferring Bees.

I have 2 colonies of bees in 8-frame hives. The bees have built the hives so full of bur and brace combs that they can scarcely get into the supers, and they have all these bur and brace combs full of honey, so that it is almost one solid chunk of honey.

1. Is there any way in which these bees can be taken or driven out and transferred to a hive with straight filled-out combs, though empty, and then feed them? How can I get them out? Should I wait till they swarm?

2. What caused them to build this way? They had empty supers on at the time, although they didn't have any empty comb for baits, just 3-cornered starters. I have 15 colonies, but only these 2 have built this way. IOWA.

ANSWERS.—1. It is not entirely clear what the trouble is. If it's only brace and bur combs, then the only thing to do is to pry up the super and scrape off the bur-combs. But when you speak in one place of transferring to a hive with *straight filled-out combs*, that looks as if the combs were built crooked. If the combs are built crooked, then you are to straighten them, cutting apart where necessary, and forcing each comb into its own frame and fastening it there with strings till the bees build it there. If the combs are too crooked for that, then you must transfer. Wait till the bees swarm, and 21 days later cut out old combs and melt them up, adding bees to the swarm.

2. If it is merely a case of bur-combs, there is probably too much room between hive and super—¼-inch is about right. Of course, the bees will build in bur-combs again so long as they have too much room, no matter how often you may scrape them out. If too much room is not the trouble, I don't know what it is.

Stories About Bees.

In a recent article in one of the leading magazines, a writer of some prominence makes the following statements concerning the orange-growing region of Florida:

"Every tree (orange) is alive with honey-gatherers; but they get drunk with delight, and it is said that they do not make as much honey from orange blossoms as from some common weeds. * * * I know of nothing like it in the North, except when the lindens are in blossom, and then you get it, for the *bees will work in the lindens all night.*" (Italics are mine.)

In the same article two other statements are made that seem strange to me:

"Seventy-five great pines, 50 feet to the first limbs, surround my house. In midwinter, when these are in bloom, whole swarms of bees are up there at work, and *pine honey is not so bad after all.* It has a taste of figs."

"I have a neighbor who has devoted himself to bee-keeping, and does as *well here in winter* as he does in Ohio in the summer—that makes a whole year of it."

From these statements it would seem that bees are accustomed to work in linden trees all night, that they store honey from pine trees, and that bees in Southern Florida gather honey in the winter to such an extent as to make it practicable and profitable for an Ohio bee-keeper to own and operate apiaries in both States—working the Northern apiary in the summer and the Southern in winter.

I am not an old hand at the business, having kept bees but 5 years; so I expect to learn new things about bees. However, I have read 4 or 5 bee-books, including "Langstroth," "A B C," and "Forty Years Among the Bees," and I also take and read the 3 bee-papers published in this country, and in them all I have seen no mention of pine honey, or of bees working at night. About bees storing honey in Florida in winter I know nothing, having never been there; but I wonder what the Ohio bee-keeper did with those Florida bees in the summer.

Will you kindly inform me how much of truth there is in these statements?

PEORIA.

ANSWER.—The writer is not so far off as you probably think.

It is just a little uncertain what he means when he says that bees working on orange blossoms "get drunk with the delight." That may be a figurative statement, meaning merely that the bees become very much excited at their work. It may also mean that the bees appear stupid as if intoxicated. I have never heard of anything of that kind with regard to oranges, and if it is at all common it is strange that no one has ever mentioned it before. Yet I have seen the same thing when bees were working on Echinops spherocephalus, called also Chapman's honey-plant. Often several bees would be seen on one of the globular heads of flowers, looking very much as if they had become stupefied by what they had been gathering, just sitting in a dumpish condition, scarcely moving when touched by the finger.

I don't know about bees working on lindens all night. I think it has been reported that on very bright moonlight nights bees kept at work on the lindens, but I don't know how much honey has been gathered in that way.

I never heard of pine honey in this country, but in Europe, near the great pine forests, pine honey is quite an item. I have seen bees at work busily on my evergreens gathering pollen, but could not say whether they got any honey.

In the South flowers bloom and bees gather at the time bees are in winter quarters at the North, and I have an indistinct recollection of bees being moved back and forth, but not lately, so I doubt if it is a very paying performance.

Wintering on Diseased Honey.

I am a young bee-keeper, 17 years of age, and own 2 strong 10-frame colonies, and one weak colony. I am wintering them out of doors.

June 16, I got a weak colony of gray bees, but they somehow succumbed to foul brood or bee-moths. I was not, at the time, in a position to look after them in the proper manner and they became weaker day by day until they could not resist the thieving bees of the stronger colonies, which robbed them of all their surplus honey. A few days after, upon inspection, I was surprised to find my weak colony deserted. I forgot to say that I had looked several times for their queen, but was unsuccessful in finding her royal highness. I think she died.

Today my surviving colonies' floors are saturated with honey, but they seem to be wintering well. Do you think they will winter all right with that diseased honey stored in their brood-chamber, for I think it was diseased. What ought I to do? ILLINOIS.

ANSWERS.—It may be that it is only the moisture from the bees that is running on the floor of the hive. In that case there is nothing to do unless to give the bees a little larger entrance. But if there is any foul brood in the case, the matter is very serious, whether anything is running out of the hive or not. There is nothing to be done at this time of year with the bees, but there is something to be done with the bee-keeper, and that is to get him thoroughly informed about foul brood, so he can tell whether his bees have it, and what to do if they have. If you have the back numbers of the American Bee Journal, you will find much about foul brood. Also in the bee-books. Then if it turns out that your bees have the disease you will be able to act intelligently, and if not you will have some information that may be of great value to you at another time.

Feeding Sugar for Winter Stores—Open Winter.

I am near the Kentucky and Tennessee line. I have 9 colonies of bees in hives 18¼ by 14¼ by 11¾ deep, inside measure. I started last spring, made my own hives, and bought and transferred bees from log-gums. I did not get this work done until after fruit-bloom, on account of ordering my supplies late, and then having them lose 30 days in freight transportation. I used full sheets of foundation. I bought Italian queens and requeened nearly all of them, although most of them were Italian stock. I got very little surplus. I think it was because I was not ready for the harvest. Some of them went into winter quarters with plenty of stores, I think, and some had very little.

1. On November 25, I made a mixture of granulated sugar and water, just enough water to wet the sugar. I then took out some frames of comb from 3 hives, and poured this into the comb. Is this a good way to feed? We have had a very cold winter. Bees have been flying every week or ten days, and have been flying every day for 4 days. The thermometer is above 60 degrees.

2. Do bees get anything to eat or build up on this kind of weather and time of year, or do they require more stores than they would with a regular cold winter, or in the cellar? I have a large cellar, and could put them in, but did not think it necessary this far South. KENTUCKY.

ANSWERS.—1. Merely wetting the sugar without thoroughly dissolving it is not good. The bees will use out the liquid part, carrying out the granules, thus causing waste of sugar and extra work for the bees. To be sure, in England they sometimes feed dry sugar, but their climate is not so dry. Besides, the sugar is over the bees, and the moisture from the bees arises and settles on the sugar.

2. I don't know. There may be something in bloom in pretty cold weather, but certainly very little even so far south as southern Kentucky for bees to work on in January. They probably use all the more stores for flying so much. Yet bees would probably not do so well in the cellar so far south.

Best Hive for Extracted—Winter Protection, Etc.

1. Which is the best hive for extracted honey and artificial swarming? If a 10-frame is better than an 8-frame, would not a 12-frame be better than a 10-frame, to prevent natural swarming and to receive the greatest amount of surplus?

2. If a hive is protected from 3 sides by nailing heavy galvanized tin to it so as to be waterproof, and allow about 3 inches of straw to be packed between the body of the hive and the tin, would it protect a colony of bees over winter, and induce early brood-rearing in the spring, in Kansas?

3. How many colonies of bees can be kept on 40 acres of alfalfa without overstocking it? KANSAS.

ANSWERS.—1. A 10-frame hive is better than an 8-frame, and most of those who produce extracted honey use 10-frame hives. Yet some think a 10-frame hive is too small. Instead, however, of using 12 Langstroth frames, these generally use frames of larger size. The Dadants, who are in the lead as successful producers of extracted honey, and who have an astonishingly small number of swarms, use the Quinby size of frame, 18½ x 11¼. The hive takes 11 of these frames but by the use of division-boards the number is generally reduced to 9 or 10.

2. That ought to provide good protection. I don't know whether it would induce earlier brood-rearing.

3. I think I've seen it estimated by some one in the alfalfa regions that 2 or 3 acres might be counted on for a colony of bees. But in some places alfalfa yields more than in others, and it is very evident that the treatment of the alfalfa must make a great difference. If 40 acres are allowed to stand for seed, allowing the bees the fullest benefit, or if the alfalfa is allowed to be well on in bloom before each cutting, it might not be such a wild guess to say that there might be several colonies for each acre. If it should be cut each time just as it begins to bloom, 10 colonies might be too many for 40 acres. So there you are.

Late Mating of Queen—Hive-Covers—Winter Protection Most Important Thing.

1. Do you agree that a queen is never mated after she is 2 or 3 weeks old? Last March I had a colony of bees supersede its queen, and this colony contained just a small patch of drone-brood which did not hatch till the queen was about 10 days old, and there was no other drone-brood in the yard. The queen commenced to lay when she was about 2 months old, and now she is the mother of one of the strongest colonies. I give this simply for what it is worth. I examined this colony once every 2 days, till the queen started to lay, and so these figures are accurate.

2. Do bees, when they die a natural death, without being molested, have their honey-sacs filled with honey? If I am correct, they always do unless they are starved.

3. What kind of a hive-cover do you prefer for a climate like Central Missouri?

4. What do you consider the best protection for bees in single-walled hives, wintered on the summer stands? Which do you like best, wooden cases, or paper wrapping, or do you prefer something else to either?

5. What do you consider *the* most important *thing* in all bee-culture, if you consider one of any more importance than the rest? MISSOURI.

ANSWERS.—1. As a general rule a queen is never mated after she is 10 days old—perhaps not after she is a wek old. But there are exceptions, and how far those exceptions extend I don't know. Some say that a queen born in the fall may not be fertilized till the next spring. If your queen did not lay till 2 months old, she may have been fertilized only 3 days before she began to lay, and she may have been fertilized sooner, but likely she was at least a month old when fertilized.

2. I don't know, but I suspect that in general a bee dies with an empty sac. It would otherwise be a waste, and Dame Nature is a pretty economical old lady.

3. For that or any other climate a hive having a dead-air space. It is warmer in winter and cooler in summer.

4. Hard to say. Perhaps, convenience and all things considered, the paper wrapping.

5. A thorough knowledge of everything connected with the business. Perhaps you want to know which is more important, the bees, pasturage, hive, or some other thing. Hard to say. Bees are no good without pasturage, and pasturage is no good without bees. You can't very well get along without a hive. But if you insist that I must pick out some one thing to which the bee-keeper must give the greatest attention, I think I would say the queen. For whatever the queen is, that decides what the bees are. By breeding for the best all the time, a man is more likely to get ahead than by giving his attention to something else, such as hives or pasturage.

Transferring from Store-Box.

I have a chance to buy a colony of bees which are in an ordinary store-box. Can they be transferred to a good bee-hive, and if so, how is it done? ILLINOIS.

ANSWER.—Formerly it was thought the correct thing to transfer during fruit-bloom. Nowadays you wait till the colony swarms, hiving the swarm in a movable-frame hive, then 21 days later cut up the old hive, adding the bees to the swarm and melting up the old combs. If the store-box that contains the colony is very large, the bees may be slow about swarming. In that case it is well to reduce its capacity to a cubic foot or less. You may do this by cutting away the lower part of the box, even cutting away unoccupied combs. Of course, you will do this early in the season, before the bees begin to fill up. Possibly the box is not very deep, but long. In that case you may fill something, as hay, into the unoccupied end. If you prefer, however, to transfer during fruit-bloom, you will find instructions for transferring in your bee-book.

Do Nurse-Bees Affect Queen—Unfinished Sections.

1. Is the nature, quality, color, etc., of queens affected by the bees that rear them from the egg? That is, if I give a cross colony eggs from a queen whose workers are gentle, to rear a queen, will the workers of the queen reared be gentle if she is fertilized by a drone from a gentle colony?

2. What causes one side of a section of honey to have a portion about one inch from the bottom not finished and the other side perfect? With the same foundation on other colonies, every box was filled full, and capped. I don't mean the outside sections. NEW YORK.

ANSWERS.—1. It is held by some that the character of a queen is materially affected by the nature of the nurse-bees that rear her. It is certain that a young queen poorly fed will not be so good as one that has a bountiful supply of best food. That is perhaps the chief reason why the attempt to rear queens very early in the season is generally a failure. But take two royal larvæ, one fed by nurse-bees of the most vicious temper, the other by the gentlest of all bees, each being alike lavishly fed, and it is hard to understand that there should be any great difference in temper of the young queens, if both had the same mother.

2. I'm not certain I fully understand the case. As nearly as I can make out, the sections all through the super are only partly filled toward the bottom at the outside of each section. That would be the case in a poor season, or at the close of any season when the bees did not get enough to fill and finish all the sections. In a case of this kind it is always the outer side of the section that lags

the most, perhaps because warmer toward the center. Possibly there may be some other reason for the outside of the section being behind the inside, but the fact of the difference I've often noticed. But other colonies, you say, in the same yard, plumped out their sections all right. Well, the answer is still the same; there wasn't enough honey to fill out the sections. Not that there was not enough honey in the fields, but because the bees were too few in number to bring it in, or else too lazy to do so. That's the best I can do at a guess.

Plan for Control of Swarming.

I have practised the plan advocated by Mr. Chapman, in lifting frames of brood over the zinc excluder just prior to the honey-flow. After the 2 upper supers have been extracted the large force of workers will fill 3 comb-honey supers at once. As I like to produce comb honey, I thought to use the Dudley system of tubing, but after the manner recommended by a writer in the Review, which consists in placing the hive containing the brood alongside the hive in which the queen is, with a tube connecting both. As you claim that some heat is lost by the Dudley system, how would it do to tack wire-cloth on the bottom of the hive containing brood and place it immediately on top of the section super or supers; then attach a Dudley tube connecting said hive-body with the entrance of the lower hive containing the queen?

MICHIGAN.

ANSWER.—The plan may likely work all right. Like many other things in bee-keeping, you never can feel sure until you submit it to the bees themselves.

Hive-Entrances—Bait Sections—Foundation—Supers.

1. How large ought the entrance to be for bees to do best?

2. What do you mean about baiting to get the bees to work? Do you put in sections partly filled with honey?

3. What kind of foundation is the best to use? I use what is called "light brood" in the catalog. Is that all right?

4. Do you fill all the frames with comb foundation when you hive a swarm? I have the 8-frame hive.

5. How do you manage about putting on the supers and taking them off, and when?

6. Do you fill all the supers with comb foundation?

WEST VIRGINIA.

ANSWERS.—1. It may vary all the way from 2 to 24 square inches, according to time of year and circumstances. At this moment my bees have 24; but they are in the cellar, and if out would not have any such large entrance. As soon as they are put on their summer stands they will have only one square inch for an entrance. Then when hot weather comes they will again have the big entrance.

2. Sections that are only partly filled are emptied out by the bees in the fall, and the next year one or more of these are put into the first super to start the bees. Such sections are called bait-sections, or baits.

3. Light brood, supported by wires or splints, is all right.

4. Yes, for if you leave any part of a frame without foundation the bees will build drone-comb there. Some, however, give only part of the frames when a swarm is hived, as only worker-comb is built at first, and afterward give the rest of the frames with comb or foundation.

5. That's too big a question to be answered here. You will find it fully answered in your bee-book, and after studying that, if there is anything you do not understand, your questions upon any point will be cheerfully answered here. This department can not take the place of a bee-book; but comes in only as a supplement.

6. Personally I fill each section with foundation. Some use starters, filling only half or fourth of the section.

Colony Stored No Honey—Best Bees for Comb Honey—Nucleus Plan of Introducing.

1. What is the matter with one of my colonies of bees? I hived it a year before last, so it has had 2 seasons. All last season it would not work in the super, nor store any honey, while the rest were working fine. It acted weak in the fall. I thought it would die, as some of my other weak ones did, but it kept well all through the winter, and it is one of my best colonies right now, and it did not swarm last season when all the rest were swarming. The winters are very warm here. It is not necessary to do anything toward wintering. I looked at it today and the bees are carrying in pollen—quite a lot of it. I think it was working more than any other of the 5 near it. What do you think is the matter, and what could I do for it?

2. What bees do you think are best for comb honey? I have heard that the gray Carniolan and Banat bees are better than the Italian. Do you think so?

3. Is the nucleus plan of introducing, as stated in the "A B C of Bee Culture," of 1905, a good one? Do you put the queen in right away with the frames?

The winters are very mild here. The almonds will be in bloom about February 15, so that the bees get an early start. Willow is almost in bloom now. Bees are working on the buds now, but it is not a very heavy honey-producer.

CALIFORNIA.

ANSWERS—1. Hard to guess without knowing more about the case. It is possible that the colony had a very poor queen and have superseded her, and now have a much better queen, so they are doing better. Too much drone-comb in the hive may be one trouble.

2. All things considered, you will probably do as well with Italians.

3. Yes, the queen may be put in when the nucleus is first formed—caged, of course—and there is less hostility to her because there are mostly younger bees in a nucleus.

A Bunch of Interesting Questions.

1. What would be the result if I were to put say three supers containing extracting-frames and sections over a good swarm of bees about June first, particularly if they were a swarm put back on the old stand in an empty hive? Would they store as much honey as though I put the supers on one at a time?

2. I am using a super 5⅝ inches deep. What would be the result if I were to use two of these fitted as brood-chambers? Would it do as well as a hive 10 inches deep with continuous frames?

3. What methods, if any, besides the knife have been used since the invention of the extractor to get rid of the cappings of the combs?

4. Make a guess as to the thickness of capping of combs containing honey.

5. I am compelled to move my bees in the spring. If I leave a weak swarm in the yard will returning bees go to it?

6. In the coming season I am going to use some bottom-boards open at both ends and with spaces varying from ⅜ to 2 inches under the frames. Has this ever been tried, and do you not think it possible that a small space open at both ends would keep a hive as cool as a deeper one closed at one end?

7. Is a "chaff" hive entirely practical? If not, what are the objections to it? I have no cave and do not like to contemplate the work incident to packing 50 or more hives with paper or other material.

8. Would it not do just as well to raise the super from the hive, and from each other when there are several on, as to "slide them back a little," for ventilation, besides being much easier? Pried apart and a wedge, or match, shoved in, would not let so much rain in, in case of a sudden storm as though they were slipped over.

9. Some years ago, before I got bees, some one proposed to put the bees into a hive with a large number of sections instead of frames. What was the man's name, and what was his plan, if not too long to detail? Otherwise, where can I find an account of it?

10. The coming season I wish to produce more extracted honey than comb, in sections. May I put both sections and extracting-frames into one super, using fences between frames and section-holders? I should use two frames to one of the section-holders.

IOWA.

ANSWERS.—1. The chief objection to putting on too many supers at a time is that it makes too much room for the bees to keep warm. But the time bees swarm the weather is so warm that it would make little difference unless there were cold spells. Even then, the difference would not be so very much.

2. It would be all right except that it would leave a deep space under bottom-bars for the bees to build down in. You could put something in the bottom-board that would reduce that space to an inch or so.

3. Turn to page 306 of the American Bee Journal for October, 1908, and you will find description and illustrations of the Bayless uncapping machine.

4. Possibly 1-64 of an inch; but that may be a wild guess.

5. That depends on the distance. If a mile or more, no bees are likely to return. If only a short distance many will return, and unite with any colony left there. If you don't want them to return, you might try the plan of Geo. W. Williams, "the shaker." As soon as you put a colony on its new stand, take out the frames and shake all the bees on the ground in front of the hive and then let them run in.

6. Yes, practically the same thing has been tried often. The opening at the back end will do as well as, or better than, having a deeper space. Only it isn't quite so convenient at the time of year when you want to keep things warm.

7. Chaff hives have been successfully used to quite a large extent, although perhaps not so much as formerly. One objection is their weight and unwieldiness; another that when the sun shines on a hive in winter it takes too long for the heat to penetrate the thick walls.

8. In the long run it would be much harder. You would have bur-combs galore, and a dauby mess scraping off the honey built in the deeper space.

9. I don't remember hearing of any one using sections instead of frames. Possibly you refer to Jasper Hazen, if I have the name right, who claimed great things by having a big hive with sections on all sides of the brood-nest. By going back years enough you will find all about it in the American Bee Journal. But if you have any idea of using it, I advise you not to waste time hunting it up.

10. Yes, E. D. Townsend, an excellent authority, uses both sections and extracting-frames in the same manner. But it would not work just the best kind along with your plan of giving the bees a big lot of super-room at a time. The bees would show a preference for the extracting-combs.

A Beginner's Questions.

1. If I were to stimulate brood-rearing in the spring as much as possible, and just before the honey-flow lift the old hive off the stand and place a shallow brood-chamber with honey-board and sections on in place, then shake the bees and the queen off from 8 to 9 frames, and set the old hive on top with a Porter bee-escape under it, would that practically do the swarming for the season?

2. There is foul brood close to me. Wouldn't it be better for me to work for honey than for increase?

3. Could a man keep a queen over winter by putting her in a large cage with plenty of candy in it, and about 200 or 300 attendants, then lay the cage on the frames of a strong colony?

4. Is a solar wax-extractor best for the small bee-keeper?

5. I have 2 colonies of bees, one strong and one weak. The weak one is over the strong with screen wire between. I thought they could get the heat from the lower hive. Was that all right?

6. I am going to unite them in the spring according to the Alexander plan, given on page 432 of "A B C of Bee Culture," and divide them just before the honey-flow. If I left them together longer, would the bees be likely to kill one of the queens?

7. How would it do to give a colony lots of drone-comb and feed them after the honey-flow, so as to produce lots of drones from a good queen, and then rear queens from good stock? Wouldn't the young queens have a good chance to mate pure?

8. Would it be a good idea to try to have Cyprian queens mated to Italian drones? They claim that the Cyprians are more prolific and have longer tongues, but are worse to swarm. The cross just mentioned would have the prolific queen and the workers would be half Italians. How would they act in regard to swarming? I rather think that cross would be good if they did not swarm too much.

9. In regard to foul brood, instead of destroying all the combs, destroy just the part that has bee-bread and dead larvæ in them. Then extract the honey and wash out the combs or starve the bees until they eat all of it. Then allow them to fly out. Would that be a good way.

INDIANA.

ANSWERS.—1. Very likely; but it would be more sure if you should operate just after the beginning of the honey-flow instead of before; also if you should use something larger than a shallow brood-chamber.

2. Most likely.

3. I don't know. Sounds well, but may not pan out so well. Not very hard to try.

4. Likely. It doesn't get out so much wax, but is less expensive.

5. All right for a while; but if the bees in the upper hive try to get out and find they are fastened in, there may be trouble.

6. If you mean you're going to let the upper bees be over wire-cloth with no chance to get out, you may find both queen and bees dead. The Alexander plan has them over an excluder; but that can not be continued too long.

7. May work all right; but you'll find it not an easy job to get the bees to rear drones out of season, even with heavy feeding. Likewise not easy to rear young queens then. Likewise not easy to get them mated then.

8. Some speak well of such a cross; but it's likely to be a cross cross, although perhaps no worse than pure stock for swarming.

9. Ought to work, if you're sure to get rid of all cells having germs or spores, and of all honey that has been in such cells.

Reports and Experiences

Rearing Young Bees in Winter.

I put into winter quarters 54 colonies. I cleaned out the dead bees this morning, and all colonies seem to be doing well. I have one colony in my room where I keep the temperature from 60 to 70 degrees. I am trying an experiment which I have never heard of from any books. It is to see if I can rear young bees in January and February. I have a Miller feeder on the hive, and on one side I have water and on the other side honey and syrup—half granulated sugar and half water, and some honey in the combs. They are carrying the honey and syrup away. I think they are storing in the combs below.

James W. Bell.

Bedford, Ky., Jan. 18.

Unfavorable Season for Honey.

Bees were no good here this year. I have 48 colonies, and got only about 400 pounds of extracted honey. I haven't put them into the cellar yet. It is too warm. They are out every few days. Today was like summer. The last two years the bees that wintered on the summer stands have come out the best in the spring. We had nearly 5 weeks of rain in the last of May and the first of June. It drowned out the white clover on the bottom land, so it did no good. There is no money in bees here except now and then a year.

Abram Palmateer.

Creston, Neb., Jan. 4.

Kerosine Oil for Robber-Bees.

I read 3 bee-papers, and see many cures for robbing. But I have failed to see my simple cure:

Take a small quantity of kerosene in an old can and 2 or 3 turkey or goose quills. Dip the quills in the kerosene, and swab the entrance to the hive, or any place where robbers bother. If bees are very thick at the entrance, use a little smoke, as the coal oil is apt to kill. It works like magic.

Duluth, Minn., Jan. 23. Wm. Taber.

Reduction of Tariff on Honey?

While all kinds of talk is going on about the reduction of tariff, I have heard nothing said as yet either for or against reducing the tariff on honey, and I take three bee-papers.

To the bee-keepers of the States who usually have a local market for their product the reduction of tariff would cut no figure to speak of, but to the honey-producers not only of the Insular Possessions, but to a large number of bee-men within the confines of the United States, who depend upon a distant market, a protective tariff is an important item.

I quote from a letter dated Dec. 31st, from a New York honey-buyer.

"However, since Cuba and Mexico, as well as Hati and San Domingo, are offering quite freely now, prices are lower, and the demand has dropped off."

The following is from a manufacturing firm in New York to whom I shipped 13 tons of honey, they paying a price that netted me an insignificant 48 cents per gallon:

"Furthermore, we desire to state for your information that we did not have such an exceedingly good bargain in this entire transaction, because the honey can be bought in Havana at a much lower basis."

While editors of bee-papers and bee-keepers, as a rule, are not politicians, still I see no reason why they should not ask for protection.

W. J. Young.

Arecibo, Porto Rico, Jan. 18.

[This subject was brought up at the Detroit National Convention, and a motion passed favoring it. —Editor.]

Iowa Foul-Brood Law—Why Not?

It seems that Iowa ought to have a foul-brood law. The disease is getting quite a start in the State, so I am informed. I believe that every State adjourning Iowa has a foul-brood law. Our representative from this county is a bee-keeper, and will do all that he can to pass the foul brood law. Why not the bee-keepers of Iowa meet and organize an Iowa State Bee-Keepers' Association, and then we will be in a position to get a law passed? I am willing to do all I can to get the law passed.

T. L. Shawler.

Silver City, Iowa, Dec. 30.

Large Flow of Honey.

I have kept a few bees for the last 35 years, but have never known such a large flow of honey as the past season. I have 7 colonies of Italians that averaged me $15, besides what I gave away and kept for my own use. White and sweet clover and hartweed all gave us a good flow.

G. T. Willis.

Hoopeston, Ill., Jan. 4.

Good Queens Essential.

My crop of honey this year was a little light, averaging about 20 pounds per colony, although my best colony gave me 70 pounds. It was headed by a young Italian queen of my own rearing. I have learned by experience that the most essential thing for a good crop of honey is a good, young, prolific queen, and to see that the bees do not run short of stores in early spring.

H. L. Russell.

Lone Oak, Tex., Dec. 28.

Bright Prospects for 1909.

The year 1909 is here, and we, as West Virginians, have the brightest prospects for a prosperous year we have ever had. The people are becoming more interested in handling bees than they ever were in this country.

J. E. Waggoner.

Orlando, W. Va., Jan. 5.

Making Increase.

I have but 5 colonies of bees, and I did pretty well with them last season, getting 100 pounds of honey. One of them stored over 34 pounds of nice honey, which is pretty good for this part of the country, as it is not very well adapted for bee-keeping. The main source of honey is alfalfa and smartweed.

I captured my first swarm in a decoy hive placed in an apple-tree, and increased to the number I have now. My way of making increase is as follows: I go to one of the strong colonies and take 3 frames of brood and what bees cling to it, and place them in a new hive and cage a queen if I have any extra ones. If not, I let them rear their own, and after that is done, I place the new hive on the old stand so as to get the field-force, and set the old hive about 3 feet to one side of them, and the work is done. What do you think of that way of making increase, in a small way?

C. W. Barr.

Florence, Kans., Dec. 31.

Introducing Queens.

In September, 1907, I had some small colonies which I wished to build up, and also had a strong colony with a mismated queen. I killed the mismated queen, and two days later I smoked the colony, removed 2 combs of sealed brood, intending to give them to the small colony, and as I brushed the bees off in front of their hive, the bees and queen came from the small colony, and went in with the bees which had been brushed off their combs, and there was no fighting. Next day I looked through the hive and found the young queen laying. So I left them alone, and in 1908 that was the best colony I had. Would it not be a safe way to introduce a queen by removing the old queen, after one or 2 days brush the bees off of 2 frames in front of the hive after smoking them well, then turn a queen loose and let her run in with them, or shake the bees and queen from a small nucleus down with the in-going bees and send a few puffs of smoke in with them? I have never heard of any one trying the plan. I mentioned the plan to a man who has had some experience in introducing queens. He said he would not want to risk the plan with a queen that he had paid for, but it might do to try one of his own rearing. I would like to have an opinion on this method of introducing.

J. L. Young.

Manhattan, Kans., Jan. 13.

Good Year for Bees.

We had a good year for bees this year, and I hope we will have another good year in 1909, as clover is alive yet, and the winter is fine. I wintered 61 colonies in the cellar, and they are all well supplied with honey and bees, which I believe is the best a beginner can do. My last year's crop was 2462 sections, well filled, from 30 colonies, spring count. I captured 4 stray swarms, and took 4 out of hollow trees. They are in frame-hives.

Nick Jentgen.

La Motte, Iowa, Jan. 18.

Massachusetts Foul Brood Law.

At the regular meeting of the Massachusetts Bee-Keepers' Association last Saturday afternoon, Prof. W. P. Brooks, director of the Agricultural Experiment Station, at Amherst, gave an address upon crops and honey, with a brief reference to wild flowers. He devoted most of the time to clover, and said that there was nothing that could be planted profitably for honey alone, but the nearest to it would be sweet clover. Clover was most valuable for milk—and incidentally for honey. Fertilizers, of course, were largely considered. At the close of his lecture he answered numerous questions on pertinent matters. The bee-keepers in this State are talking of a law to deal with foul brood, and it was voted to ask the Worcester Society to have a committee join with one from this Society and meet with Prof. Brooks for the purpose of framing a suitable law to be submitted to the Legislature at the present session.

Joseph B. Levens.

Malden, Mass., Jan. 6.

"Hives for Comb Honey."

With all the interest of G. M. Doolittle's article on, "Hives for Comb Honey," on page 16, the essential point is cloudy, at least not clear to me. Kindly read from the beginning of the last paragraph on the second column, "With the 10-frame hive of the Longstroth," etc., and then tell me in your next issue what he does with this original 10-frame hive after he has placed the one which he had put on it, on its place, and the supers on that. I can not make it out, and it surely must be full of brood. Does he put it on top of the supers, or start a new colony with it, or what?

Then the sentence, "Then, on the opening of this bloom," beginning on line 7 from the bottom of column 2, is not clear to me. What does he mean by the "that" where he says on line 4 from the bottom, "together with that?" Does he mean "that" honey or "that" hive?

C. Eberlein.

[We referred the above to Mr. Doolittle, who answers thus:—Editor.]

It is evident that Mr. E. could not have read carefully the last sentence in the article on page 16, or he would have noted that "The combs of beeless brood are given to weaker colonies." Or, perhaps, if he did, he failed to see that this sentence meant that the hive containing the now beeless brood, (the hive which was the original one on the stand during the spring) was placed over some weak colony, so that the bees from this weak colony would care for and perfect the brood in these combs. In working this plan I often have one, 2, 3, and in some cases 4 hives of such beeless brood on top of one of these weaker colonies, and in no case have I met with a loss of any brood, as is explained in the book, "A Year's Work in an Out-Apiary."

Regarding that "that" which puzzles Mr. E.:

Briefly, the colony wintered over in a 10-frame Langstroth hive has a queen-excluder placed on top of it as soon as it is pretty well filled with brood and bees, and on top of this excluder is placed another 10-frame hive filled with combs which are partly full of honey. Say the 10 frames have 10 to 15 pounds in them. If the bees gather more before the clover bloom, it is stored above, or added to that which was in the combs in the upper hive when given. At the opening of the clover bloom, both hives are lifted from the bottom-board, and the upper hive is taken from the queen-excluder and set on the now vacated bottom-board where the original hive has been up to this time. On top of this hive containing 10 frames of bees and more or less honey, the supers of sections are now placed, and on top of these the cover to the hive. The bees are now shaken off the combs of brood and from the original hive in front of what was the upper hive, now on the bottom-board, into which they will run as fast as shaken, and, as the hive now on the bottom-board was a part of their old home, they are perfectly contented there, and go from it to the supers of sections the same as they did from their old hive to the upper one of combs before this exchange; thus wasting no time, as is the case where supers are put on a hive which has previously been but one-story high. As the queen lays, the honey in these combs is taken out to make room for her eggs, which, together with that coming from the fields, makes a *"BOOM"* in the sections, and that with no desire to swarm, on account of the working of the plan which is given in all of the minutia in the book alluded to above, which Editor York will send for 50 cents. Or, if you have Gleanings for 1906, you will find the whole thing there as a serial, much the same as the book.

G. M. Doolittle.

Uniting Colonies to Keep Them at Same Number of Hives.

When the honey-flow stops, I move near my house say 10 colonies. Putting an empty box on the old stand, the next thing I do is to take all the full combs of honey out of the hives near the house and take them into the bee-room. I fill a hive with brood, and then set the hive at some other place. Here I find 3 or 4 combs of brood and honey in each hive. The empty boxes get the old bees, and the hives to keep get the young bees. I don't have trouble with moths. I haven't had for 25 years. Why? I always keep the colonies strong. I leave empty combs out all summer or in the bee-shed, and have no trouble with moths. Why? I keep the combs separated by an inch or 2.

A. Aspinwall.

Wahpeton, N. Dak.

Some Interesting Experiences.

Early last fall I wrote you that I had extracted 500 pounds of honey, and that I expected about 200 pounds more from my 18 colonies. This has exceeded my expectation, for I extracted 1,040 pounds, and, besides, got some fine comb honey. It is indeed a puzzle for the bee-keepers where the bees got the honey last fall, as it was the dryest fall we had here for years. All bee-keepers in this vicinity agree that the past season was one of the best we have had for many years, and the honey of the finest quality, in spite of the cold and rainy spell we had during the months of May and June.

Swarming has also been excessive, some swarms coming out as late as the middle of August for some bee-keepers, and it was only tion during the swarming season to keep even ten during the swarming season to keep even the best of Italians from excessive swarming. As stated before, I increased my colonies to 18, and they went into winter quarters November 26, in perfect condition. As I have kept a record of all queens and colonies I shall know exactly where I stand next spring.

About June 5, I noticed a colony very weak in bees, and queenless, with no inclination whatever to build queen-cells. As I was anxious to save that colony I sent for a queen. I introduced that fine Italian queen according to directions, and waited for results. Just 5 days afterward I examined the colony, but found no queen, nor any eggs, nor any other sign that a queen might be present. Thinking that perhaps at the hour I examined them the young queen was out enjoying a flight, I closed the hive and then towards evening I looked again, but still could not find her, so I concluded that the bees had got away with the queen. Then I went to my very best colony, whose queen I had removed 10 days before for the purpose of getting young queens to improve my stock—a practise I have had good success with the past years, but not so in this case. I took the largest and ripest cell, fastened it in a frame, closed the hive, and waited 5 days. A careful examination showed no queen, and what surprised me most, I could not find a trace of the cell I had introduced. Three times in succession I tried this method, always waited 5 or 6 days before I looked, and always the same result. I was getting very much discouraged, as the bees were getting small in numbers, and I had intended to unite them with another colony, when, one day, I looked over my colonies and found a large, ripe queen-cell, whose queen was just about ready to come out. I laid the cell on top of a hive, and just as I had taken out a frame from that particular colony, out she came. I grabbed her quickly by the wings and in that happy-go-lucky fashion I put her on top of the frames, closed the hive, and waited 6 days. On opening the hive I saw right away that "something was doing." The bees were more contented, there were eggs, and general satisfaction all around. I looked for the queen, and sure enough, there she was, and depositing eggs as fast as she could, and it seemed as if she meant to say to me, "Yes, sir, old man, I am boss here now," and boss she was, indeed. That colony built up, and increased so fast that by the first of September it became my second best colony. They gave me a surplus of 75 pounds of fine honey, and went into winter quarters in perfect condition, a rousing colony. This goes to prove what a good queen can and will do in a remarkably short time, if given the chance, and conditions are right for a good flow of honey.

Now the question naturally arose with me, why did the bees not only not accept the tested queen nor the cells, but completely destroyed them, and then in the last hour accepted the queen I introduced in such a careless manner.

I have been in the habit of clipping all my queens the past years, but not with good success. Out of the 8 colonies whose queens I clipped, only 3 swarmed with a clipped queen. The rest all superseded their queens, and swarmed naturally, though none of those queens were more than 3 years old.

About June 10, I had just hived a fine large swarm with the Manum swarm-catcher when out came another very fine swarm. I went quickly and looked for the clipped queen, but could not find her, though the ground is kept clean for 4 or 5 feet all around the hives, and covered with sawdust. After flying around about 10 minutes they lit on the very same place where I had hived the other swarm. They stayed about 5 minutes, then left all at once, but, to my surprise, did not go back to the parent colony, but came right down close to the ground, and then they divided and entered about 5 different hives, but to my surprise, there was no fighting. Now, where was the queen?

About a week after, I went up to look at my bees. I noticed on a hive-stand a bunch of bees, and in the middle of the bunch I saw the clipped queen scarcely able to move. Then I knew that was the queen I had lost, and neither I nor the bees could find, so I think next spring I will cut out all superfluous cells, and then try for one season, and let my bees swarm naturally.

The American Bee Journal is a great help and aid to bee-keepers, and especially to beginners.

G. A. Barbish.

La Crescent, Minn., Jan. 7.

Hard Luck—A Bee-Story.

I have had 4 pretty hard years. We have had bad seasons. Clover and basswood failed us. I had some honey this year—mostly basswood. Two years ago I lost 70 colonies out of 90. My neighbor had 87 and lost all but 6. Now that is hard luck. Poor honey was the cause of the loss. I notice when our bees go into winter with aster and buckwheat honey our losses are always heavy.

My bees wintered very well on sugar stores last winter. I have most of them on sugar this winter. They seem all right, but the ones wintering on their own honey have the dysentery, and are very restless.

I heard a story the other day which was a good one. It was told by a traveling man, who sells machinery—a local agent.

One day the head agent came, so they started out among the farmers to do business. They stopped in at a farmer's, where they thought they could sell a machine. The farmer lived in a large stone house, and had a few colonies of bees in the orchard. The old gentleman was in the orchard so they talked to him for a few minutes. He told them they had better go over to the old house and see the boy. On their way over they saw the dog barking at something in a tree. He was going through the high jumps, trying to catch whatever it was, but they paid no attention, but went over to where the boy was. They had been there only a couple of minutes when one of the girls came rushing in, saying the bees were on the dog. Of course, they all rushed to the spot. The father threw a blanket over the dog, but the dog got from under the blanket and made for the men. He thought he would get rid of the bees by rubbing himself against their legs. The air seemed to be just full of angry bees. Well, the machine men thought they must make their escape somehow, for they had never been used to bees, so looking around they saw the door open at the house, so never waiting for an invitation, they just went pell-mell into the house, and hadn't much more than landed when Mr. Dog was between their feet. Looking for some place to escape, they saw a door open away at the other end of the house, leading to the front gate. Well, he said he didn't think Tom Longboat could have made the road as quickly as they did. Untying the horses they both jumped into the rig and drove away as fast as they could, but hadn't gone far when the dog went past them like a blue streak, making for the creek below the hill. When they got there, there was nothing but the dog's nose protruding out of the water.

But they didn't go back to sell the mower. He said he would miss the sale of a hundred mowers rather than get mixed up with those bees again.

F. A. Metcalfe.

Fenelon Falls, Ont., Jan. 18.

A Good Honey-Year.

The past year was a good honey-year. I started with 14 colonies last spring, increased to 28, took off 2000 pounds extracted honey and 500 pounds of sections. My best colony produced 350 pounds of extracted honey, the average yield per colony being 200 pounds. This is, I think, a fair yield. I introduce young queens every year, and these are reared from my best colony in the yard. Poor queens are a poor foundation, and they are no good at any price. I kill them at once. A good queen is the foundation of a colony—one that will lay eggs in the right time of the year, and eggs in the right time means bees in the right time, to be ready for the honey when it is in the field. When one has not the bees when the nectar is yielding, he will never be able to harvest the honey.

Clayton Co., Iowa. B. F. Schmidt.

A Spring Day in January—Early Swarm.

Saturday, January 23, was an ideal *spring* day, the thermometer registering 60 degrees in the shade. My 30 colonies of bees are in the finest possible condition, and were making music last Saturday "to beat the band." I might *olmost* say the orchestra, but if you like fine orchestral music as well as myself, you might take exception.

I started in the spring of 1908 with 15 colonies and increased to 30 colonies. They produced 1306 finished sections, about 300 unfinished sections, and 40 frames well filled, that I am saving for spring strengthening,

This is not a very good section for bees, but last year the clover was exceptionally fine and plentiful. The dry summer and autumn fixed the clover so that there can not be much of a crop the coming season, but there is some basswood, and generally quite a good deal of heartsease and goldenrod, so I look for a light honey crop even *without* the clover.

Honey retails here at about 15 cents to 16 cents for No. 1 comb, and strictly *fancy* retailed in a small way the past season at 20 cents.

In making hives I allow for inside measure 18 3-16 inches in length, 12⅛ or 12 3-16 inches in width, and 9½ inches in depth. This gives correct space for Hoffman frames with staples driven in the depth of the gauge sent in each package of frames. I cut the end-pieces 8 11-16 inches deep, and the sides 9½ inches. Then nail flush with the bottom of the hive, and that leaves a space 13-16 inches deep on top of the end-pieces.

I then notch the side-pieces at the ends ½-inch back, and down flush with the tops of end-pieces, and nail in a strip ½-inch by 13-16-inch clear across. This makes a neat-looking and strong hive. I use 8 frames and a follower-board, but if I were starting in the bee-business again, I would make all my hives wide enough to hold 9 Hoffman frames and a thin follower-board. If I had to hire a carpenter to do my work at $1.50 or $2.00 per day, I would buy my hives outright; but as I greatly enjoy the work of making them myself in the winter time, I follow the practise of making rather than buying my hives, supers, etc. If the lumber is dressed down to exactly ⅞-inch, and you cut all pieces *true*, and the side-pieces 19 15-16 inches long, everything goes together like cabinet work.

Today a swarm of bees settled on a fence along the road, and were seen by all people passing at the time. The swarm evidently came from a hollow tree near. How is this for an early swarm in Northern Indiana?

Cromwell, Ind., Jan. 23. E. H. Upson.

Wisconsin State Convention.

The annual convention of the Wisconsin State Bee-Keepers' Association will be held at Madison, Wis., Feb. 16 and 17, 1909, at the Court House, beginning at 10:30 Tuesday morning.

It is the intention of the Association to bave a banquet, or social gathering the evening of the last day of the session, and definite arrangement for this purpose will be made at the first morning's session. It is hoped and expected, that all members, so far as possible, will bring their ladies. This was the wish of the last convention, and many members at that time agreed to do so, if possible.

The Executive Board wish to make this the best convention ever held by the Association, and for this purpose ask all members to take an active interest, even if you cannot attend.

We want every member, and all bee-keepers to send us good questions, or come prepared with questions, as the question-box will be main feature of the convention.

We also invite those who are interested in any particular subject or question, to write a short paper on the same, with the view of bringing out a thorough discussion.

If those who can contribute either questions or papers, or both, will advise the Secretary, we will try to prepare a regular program, for distribution prior to the time of meeting, but remember, that the Question-Box and the Social Part will be the main features.

N. E. France will give a talk on, "Improvements to Date, to Make Work Easier and More Profitable."

We invite every member to renew his membership. We invite every bee-keeper to become a member.

Annual Dues for the Wisconsin State and National are $1.00 for both, or you may become a member of the Wisconsin alone by sending 50 cents to the Secretary.

Augusta, Wis. Gus Dittmer, *Sec.*

The Iowa Seed Co.

As usual, one of the first catalogs to reach us this season is that of the old reliable Iowa Seed Company, of Des Moines, Iowa. We see that it has been very much enlarged over previous years, now containing 132 pages, crowded with large and varied lists of the best seeds, plants, bulbs, garden tools, and nursery stock; the descriptions are well and concisely written, without exaggeration, and it is profusely illustrated. Nine leading varieties of corn introduced by the Iowa Seed Co., and several plant novelties, are shown in natural colors on the two beautiful color-plate pictures, and the cover is handsomely lithographed in seven colors. An unusual feature in seed catalogs that will be appreciated by recipients of the book, is a section devoted to cut flowers and floral designs, and to cage-birds and gold-fish. The Iowa Seed Co. is favorably known to most of our readers. We would advise those of our readers who do not receive their catalog to send for a copy. Please mention the American Bee Journal when writing.

Walter S. Pouder's New Building.

It is now 859 Massachusetts Ave., Indianapolis, Ind., and in a brand-new building, that Mr. Walter S. Pouder can be found during business hours. The new store-room has every modern equipment to facilitate the handling of bee-keepers' supplies, honey and beeswax. This is Mr. Pouder's 20th year in his particular line of business, and he has made an enviable reputation for promptness, reliability, and everything else that goes toward making a deservedly successful business.

15 PACKETS CHOICE FLOWER AND GARDEN SEEDS 10c

To introduce our high-grade Seeds we will mail the following 15 packets and our large illustrated 1909 Catalogue, also a coupon good for 10 cents, all for one dime.

VEGETABLE SEED: Beet, Cabbage, Cucumber, Lettuce, Onion, Parsnip, Parsley, Radish, Tomato and Turnip. A good kitchen garden.

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BINGHAMTON SEED CO., 101 Court St., Binghamton, N. Y.

Southern New Jersey Truck Farms.

The raising of poultry, fruits and vegetables in southern New Jersey has passed the experimental stage, and is one of the thriving industries of that wonderful section.

The influence of the Gulf Stream and the proximity to the ocean make the seasons there very much earlier than they are less than a hundred miles further inland. Because of this the South Jersey farmer gets early crops, which bring the highest prices. This section is near the Atlantic Coast resorts, where the Easter season is becoming every year more and more extensive.

In addition to this, the very desirable markets of New York and Philadelphia are also within easy reach, thus opening up to the farmer and chicken-raiser in this locality practically the best markets in the world.

The Daniel Frazier Company, 750 Bailey Building, 1218 Chestnut Street, Philadelphia, Pa., has made a great success in selling small farms upon easy terms in this desirable and productive region. The Frazier Company has land within 17 miles of Atlantic City and not far distant from Ocean City, Wildwood, Anglesea, Avalon and Cape May. This land is all very desirable ground for truck-raising, the growing of small fruits and vegetables, and the raising of poultry.

It is sold upon the very reasonable terms of $5 down and $5 monthly, the price of 5 acres of this well-located, well-drained, high and dry ground being $100.

The Frazier Company will send a handsomely illustrated booklet and detailed information regarding this country and its prospects, absolutely free, to anyone who requests it.

A Poultryman's Necessity.

According to men who know—poultry keepers who are practical and successful—there is nothing of greater value in the feed room than a good, easy-working, always-ready bone cutter.

Cut green bone, freshly cut of course, is as much part of the regular ration as corn. Consequently the necessity of the machine.

Many may claim to be good, but there is quite a difference in construction and ease of operation and this is most apparent when one is familiar with the Crown Bone Cutter, made by Wilson Bros., Box 618, Easton, Pa.

This handy machine works quickly and simply, turning out the bone-shavings in just the shape for quick digestion by the fowls.

One of their catalogs, sent on request, will explain the principle and give you valuable information on egg-laying. Write for it.

New Catalog of Binghamton Seed Co.

The Binghamton Seed Company's new catalog cover for 1909 is printed in colors and shows a bouquet of beautiful roses in their natural tints.

The catalog itself is very interesting. It tells about some new and desirable varieties that are probably just what many flower lovers are looking for. But the old popular varieties that have been sold for years by this Company and have won a place with many persons as peerless seeds, are still offered and deserve to interest the new customers as well as the old. "Honest price—honest quality," is the motto of the concern and over 25 years of prosperous and increasing patronage proves that the motto has a real meaning with them.

Any of our readers who intend purchasing any flower or vegetable seeds this spring, should write at once for this catalog. It will aid very materially in planning your seed expenditure, and will save you money. Address, the Binghamton Seed Co., 101 Court St., Binghamton, N. Y., mentioning this paper when writing.

"The Circle" Plan.

To show that beauty, and honor, and kindness, and joy have not vanished from off the face of the earth, nor out of the hearts of men; to recognize and exploit the good in social, business and public life; to find in individuals and in families the secrets of the life worth living, and then to tell these secrets to other individuals and families; to search out and tell in simple, direct language the romance of self-sacrifice, of noble endeavor, of high achievement, of devotion to others—not forgetting the humble and obscure while admiring the brilliant and famous; to spread the contagion of good until men and women and little children in every great city and every remote hamlet shall be caught in the epidemic; to come close to the hearts of these men and women and little children, and draw them, if we may, close to us in mutual sympathy and helpfulness; to encourage and join in their work and their play; to provide stories, and music, and pictures, and fun; to arouse enthusiasm; to awaken ambition; to guide this enthusiasm and this ambition into practical, worthy, successful effort, to be a magazine that loves and is proud of the people both in city and in country, in mansion and in cottage, in high position and at the work-bench, and that shall win the love and pride of these people in return—this is THE CIRCLE plan.

"The Circle Magazine" is one of the finest monthly publications in this country. It is $1.50 a year. We just know you would be pleased with it. It really ought to be in every home in this land of ours. It is published at Madison Ave. and 26th St., New York, N. Y. We club it with the American Bee Journal—both for one year for only $1.90. This surely is a bargain.

Langstroth on the Honey-Bee

Revised by Dadant—Latest Edition

This is one of the standard books on bee-culture, and ought to be in the library of every bee-keeper. It is bound substantially in cloth and contains nearly 600 pages, being revised by that large, practical bee-keeper, so well-known to all the readers of the American Bee Journal—Mr. C. P. Dadant. Each subject is clearly and thoroughly explained, so that by following the instructions of this book one cannot fail to be wonderfully helped on the way to success with bees.

The book we mail for $1.20, or club it with the American Bee Journal for one year—both for $1.70 or, we will mail it as a premium for sending us **FIVE NEW** subscribers to the Bee Journal for one year, with $3.75.

This is a splendid chance to get a grand bee-book for a very little money or work. Address,

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Choice White Wyandottes

15 eggs, $1.00; 30 eggs, $1.50.

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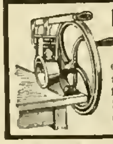

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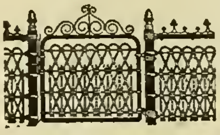

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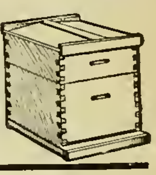

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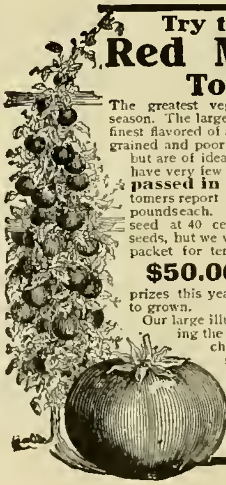

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American Bee Journal

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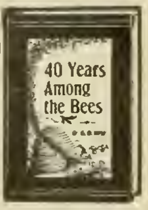
40 Years Among the Bees



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THIS book of over 340 pages tells just how Dr. Miller manages his apiaries to produce the most honey, which, in turn, brings the most money. Dr. Miller has been "at it" some 45 years, and so is competent to tell others the best way to be successful with bees. In 1903 his crop of comb honey was over 18,000 pounds, and he is not located in the best honey-producing part of the United States, either——Northwestern Illinois.

The book is bound in substantial cloth, gold-lettered, and is sent post-paid for only $1.00. or with the American Bee Journal one year for $1.50. (Or send us 4 new subscriptions to the Bee Journal—with $3.00—and we will mail you the book free as a premium.) Every bee-keeper ought to have both the book and the Bee Journal, if not already possessors of them.

As Dr. Miller gets a royalty on his book—so many cents on each copy sold—every bee-keeper who buys it is thus helping a little to repay him for his effort to lead others to success through his writings on bee-culture.

As we have a good stock of these books on hand, we can fill all orders by return mail. This is the time of year to read up on bee-keeping. Better send us your order at once for Dr. Miller's book, and study it carefully so as to make the most of the bee-season. Address,

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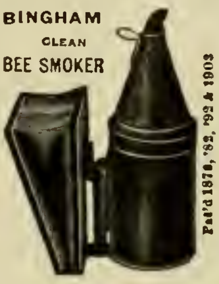

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Chas. Dadant & Son, Hamilton, Ill.—This is the Smoker recommend above all others.

G. B. Lewis Co., Watertown, Wis.—We have sold these Smokers for a good many years and never received a single complaint.

A. I. Root Co., Medina, Ohio.—The cone fits inside of the cup so that the liquid creosote runs down inside of the smoker.

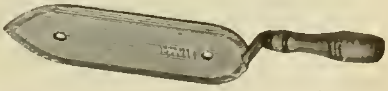
All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made	$1.50—4	inch stove
Doctor—cheapest made to use	1.10—3½	"
Conqueror—right for most apiaries	1.00—3	"
Large—lasts longer than any other	.90—2½	"
Little Wonder—as its name implies	.65—2	"

The above prices deliver Smoker at your post-office free. We send circular if requested.

Original Bingham & Hetherington Uncapping-Knife.

T. F. BINGHAM, Farwell, Mich



Patented, May 20, 1879. BEST ON EARTH.

Now Ready

The 97th edition of our catalog is now ready. If you have not received a copy and are ready to place an order for any supplies write for a copy. Our mailing list has over 400,000 names, so time is required to get the entire edition mailed. We explain this so any one may understand why a catalog may not reach him early.

The A B C of Bee Culture

When we announced the completion of the new edition late in 1907 there was a good deal of satisfaction to notice the big bunch of orders on hand, although we did regret the unavoidable delay in getting the books to some customers who had waited patiently for months. Over two thousand copies of this edition have already been sent out. We believe all urgent orders have been filled. We felt that the change of price to $1.50 postpaid might cause a little slackening in the demand. Not so, however, for in all our experience the orders never came faster.

We have also of the English edition a half leather at $2.00 and full leather at $2.50, postpaid.

German Edition, A B C der Bienenzucht in paper covers, $2.00. Cloth-bound at $2.50, postpaid, to any country.

French Edition, A B C de L'Apiculture, cloth-bound, at $2.00, postpaid, to any country.

Gleanings in Bee Culture

If you haven't seen a late copy of Gleanings you can't tell from any **brief description** how really magnificent it is. There are many **valuable** departments, and our subscribers just at this season of the year are telling how much they appreciate the **paper**.

Each issue is very fully illustrated. The covers are done by the finest engravers in Chicago, and our writers are the best in the land. Besides dozens of writers of prominence whose names we can't even mention for lack of space, we have such men as Dr. E. F. Phillips, U. S. Dept. of Agriculture; Dr. Edward F. Bigelow, Associate Editor St. Nicholas; F. Dundas Todd, former Editor Photo-Beacon; Allen Latham, Connecticut, etc.

A trial of six months (12 numbers) costs 25c. If in addition to your own subscription you secure others for six months keep 10c on each one for your trouble. A liberal cash commission to those who do canvassing for us.

Gasoline Engines and Power

Honey Extractors

For large apiaries, or where the honey comes with a rush and labor is scarce, you should investigate our power machines. A circular of these will be sent on request.

THE A. I. ROOT COMPANY, MEDINA, OHIO

Bee-Supplies

Distributor of Lewis and Root Bee-Supplies. We are now prepared to furnish promptly a full line of Supplies and Berry Boxes. Choice new stock just from factory Beeswax wanted. Send for Catalog.

W. J. McCARTY, Emmettsburg, Iowa

Mention Bee Journal when writing.

BEE-SUPPLIES. 40-page catalog free. Brimful of the latest make of hives, etc. Our supplies will please you in every way. Prices are right. We can make prompt shipments as we carry a full line of A. I. Root Co.'s supplies in stock. Don't fail to write us if you are in need of supplies. 8Atf

JOHN NEBEL & SON SUPPLY CO., High Hill, Montg. Co., Mo.

Mention Bee Journal when writing.

Souvenir Bee Postal Cards

We have gotten up 4 Souvenir Postal Cards of interest to bee-keepers. No. 1 is a Teddy Bear card, with a stanza of rhyme, a straw bee-hive, a jar and section of honey, etc. It is quite sentimental. No. 2 has the words and music of the song, "The Bee-Keeper's Lullaby;" No. 3, the words and music of "Buckwheat Cakes and Honey;" and No. 4, the words and music of "The Humming of the Bees." We send these cards, postpaid, as follows: 4 cards for 10 cents, 10 cards for 20 cents; or 10 cards with the American Bee Journal one year for 80 cents. Send all orders to the office of the American Bee Journal, 118 W. Jackson Blvd., Chicago, Ill.

MARSHFIELD BEE-GOODS

FRIEND BEE-KEEPER—We are prepared to fill your orders for **Sections.** A large stock on hand. Also a **Full Line of Bee-Supplies.** **We make prompt shipments.**

MARSHFIELD MFG. CO., Marshfield, Wis.

IOWA—J. W. Bittenbender, Knoxville,
Gregory & Son, Ottumwa.
KANSAS—S. C. Walker & Son, Smith Center.
MICHIGAN—Lengst & Koenig, 127 South 13th St., Saginaw, E. S.
S. D. Buell, Union City.
NEBRASKA—Collier Bee-Supply Co., Fairbury.
CANADA—N. H. Smith, Tilbury, Ont.
ARIZONA—H. W. Ryder, Phœnix.
MINNESOTA—Northwestern Bee-Supply Co., Harmony.
ILLINOIS—D. L. Durham, Kankakee.
OHIO—F. M. Hollowell Harrison.
TEXAS—White Mfg. Co., Blossom.
WISCONSIN—S. W. Hines Mercantile Co., Cumberland.
J. Gobeli, Glenwood.

BIG DISCOUNT

On all Bee-Supplies until May 1. Send for 1909 prices. I can save you big money. 11Atf

W. D. SOPER, Jackson, Mich.

Mention Bee Journal when writing.

5000 Lbs. Clover and Basswood Honey—nice, well-ripened—in 5-gal., round, bail-handle cans. $5.50 per can here. Sample free.

Mathilde Candler, Cassville, Wis. 10A6t

Mention Bee Journal when writing.

"FALCON"
Air-Spaced

Hives are the best all-the-year hives for the bee-keeper who uses no bee-cellar. Can be packed with chaff if desired.

"Sections"
Foundation

Of the highest quality, a trial order will convince.

BEESWAX WANTED

Highest price in cash or supplies. Write for Catalog of full line of our Bee-Keepers' Supplies. Feb. discount, 3 percent.

W. T. FALCONER MFG. CO.,
Jamestown, N. Y.

Headquarters for Bee-Supplies

ROOT'S GOODS

At Root's Factory Prices

NOTICE:---

Notwithstanding the death of Mr. C. H. W. WEBER, the business will be carried on the same as heretofore, and under the same name. Soliciting your future patronage, I am,

Yours truly,
CHAS. H. WEBER.

C. H. W. WEBER
CINCINNATI ...OHIO...
Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

Honey and Beeswax

CHICAGO, Jan. 21.—The movement in honey is not as active as we had hoped for, still there is more being sold than at this time last year. Perhaps one reason that may be cited is that all around this city the crops were very heavy and producers have brought it in to their friends, and left it at grocery stores to sell. No. 1 to fancy comb honey is 12 to 13c, with the other grades from 1 to 3c less; white extracted ranges from 7 1-2 to 8c; amber, 6 1-2 to 7c; dark honeys 5 1-2 to 6c. Beeswax in good demand at 30c.
R. A. BURNETT & CO.

DENVER, Jan, 22.—We quote No. 1 white comb honey, per case of 24 sections, $3.15; No. 1 light amber, $3.00; No. 2, $2.75. White extracted honey, 8 1-3 to 9c; light amber, 7 1-2 to 8 1-3c; amber, "strained," 6 3-4 to 7 1-4c. We pay 24c per pound for clean yellow beeswax delivered here. Our market is overstocked on honey, and the demand is light.
THE COLO. HONEY PRODUCERS' ASS'N.

CINCINNATI, Feb. 6.—The market on comb honey is very quiet; there are some sales being made at 14c for No. 1 white honey, but the demand is not brisk. White clover extracted honey is selling at 8c in cans; sage at 9c; amber honey in barrels is selling at 6c. Beeswax is selling slowly at 32c.
C. H. W. WEBER.

NEW YORK, Feb. 5.—There are no new features to report in comb honey. Market continues decidedly dull and very little moving. As we stated in our last report, for the time being we cannot encourage shipment of comb honey of any kind. Demand fair for extracted, with sufficient supply of all grades. We quote California white sage 9c; light amber, 7 1-2 to 8c; amber, 6 1-2 to 7c; white clover, 8 to 8 1.2c; West India and Southern 60 to 75c per gallon according to the quality. Beeswax, quiet at from 28 to 30c.
HILDRETH & SEGELKEN.

ZANESVILLE, OHIO, Jan. 22.—For white comb honey grading from No. 1 to fancy, producers could now secure from the jobbing trade 13 to 11c. However, very little honey is offered, and indications are that stocks will be cleaned up before arrival of the new crop, notwithstanding the fact that the demand is still abnormally light. There is scarcely any demand for extracted locally. No. 1 to fancy white comb goes to the retail grocery trade at 16c. Beeswax brings on arrival 29c cash, or 30c in exchange for merchandise.
EDMUND W. PEIRCE.

TOLEDO, Jan. 21.—The market on comb honey is quiet as usual at this season of the year. We quote fancy and No. 1 at 15 1-2 to 16c in a retail way. We have no other grades to offer. Extracted white clover in cans or barrels is worth 8 to 8 1-2c. Alfalfa honey, light amber, 7 1-2c to 8c. Beeswax 28c cash, or 30c in trade for first-class yellow wax; off grades 2c less.
GRIGGS BROS. & NICHOLS CO.

KANSAS CITY, MO., Feb. 8.—The market is well supplied with both comb and extracted, with some improvement in the demand, and the surplus stock in the hands of growers is practically all shipped. We look for a little firmer feeling. We quote sales as follows: No. 1 to fancy comb, 11 to 12c; No. 1 amber, 10 to 11c; white extracted, 7 1-2 to 8c; amber extracted, 7 to 7 1-2c; No. 1 beeswax, 25 to 28c.
C C. CLEMONS PROD. CO.

INDIANAPOLIS, Jan. 21.—There is a very favorable demand for best grades of both comb and extracted honey, and while jobbing houses are fairly well stocked, very little honey is being offered by producers. I note some arrivals of fancy white comb at 12 1-2c; No. 1 white at 12c. White clover extracted in 5-gallon cans at 7c. Some amber honey is being offered, but the demand is so slight that prices are irregular. Beeswax is steady at 29c cash, or 31c in exchange for goods.
WALTER S. POUDER.

HONEY AND BEESWAX

When consigning, buying,
or selling, consult

R. A. BURNETT & CO.

199 South Water St. Chicago, Ill
Mention Bee Journal when writing.

LAST CHANCE to secure Root's goods at a discount. We give 2 percent discount on all orders received in Feb. Our stock of bee-keepers' supplies is complete.
PILCHER & PALMER,
1024 Mississippi St., St. Paul, Minn.
Write for Free Books of Instruction.

We will Buy and Sell

HONEY

of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for

Beeswax

at highest market prices.

Hildreth & Segelken
265 & 267 Greenwich Street
NEW YORK, N. Y.

HONEY

for sale, 50 cases Amber, Buckwheat and No. 2 white, $2.50 per case, in 6-case lots at $2.25, or the 50 cases to one person at $2. 24-sect. to case; nice, thick, well-ripened amber at 7 1-2c, two 60-pound cans to case. QUIRIN'S famous strain of Bees and Queens for sale in season.
QUIRIN-THE-QUEEN BREEDER,
Bellevue, Ohio

Carloads of Bee-Keepers' Supplies

Send list of goods wanted, for best price. I do not only guarantee Chicago freight-rate, but will equalize on freight, if you live at a distance. Distance is no barrier. Catalog ready. Send for it. Bees for sale in modern hives.
H. S. DUBY, St. Anne, Ill.

Before buying your **Comb Foundation** or disposing of your **Beeswax** be sure to get our prices on Wax and Foundation, or get our prices on **Working Wax into Foundation.**

We are also in a position to quote you prices on **Hives, Sections** and **all Other Supplies.** We give **Liberal Discounts** during the months of November, December, January and February. Remember that

Dadant's Foundation

is the very best that money can buy. We always guarantee satisfaction in every way.

Langstroth on the Honey-Bee (new edition), by mail, $1.20.

Send for our prices on Extracted White Clover and Amber Fall honey.

DADANT & SONS, Hamilton, Illinois

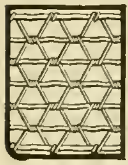
CAPON TOOLS

CAPONS bring the largest profits —100 per cent more than other poultry. Caponizing is easy and soon learned. Progressive poultrymen use

PILLING CAPONIZING SETS

Postpaid $2.50 per set with free instructions. The convenient, durable, ready-for-use kind. Best material. We also make *Poultry Marker 25c. Gape Worm Extractor 25c French Killing Knife 50c. Capon Book Free.*

G. P. Pilling & Son, Arch St., Philadelphia, Pa.



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Made of **High Carbon Double Strength** Coiled Wire. **Heavily Galvanized** to prevent rust. Have **no agents.** Sell at **factory prices on 30 days' free trial.** We pay **all freight.** 37 heights of farm and poultry fence. **Catalog Free.**

COILED SPRING FENCE CO.
Box 89 **Winchester, Indiana.**

BEE-KEEPERS!

We are the Distributing Agents for

Lewis Beeware

Prompt shipment. Satisfaction always. Send for our Free Catalog.

THE C. M. SCOTT CO.,
1009 E. Washington St.,
INDIANAPOLIS, IND.

Mention Bee Journal when writing.

Bee-Supplies for Season of 1909

Complete stock on hand, as our plant has been running steadily so as to take care of the demand for **Bee-Supplies** the early part of the coming season. We are practically overstocked at this time and advise those in need of **Bee-Supplies** to order now (shipments may be delayed until you want the goods) before the contemplated advance in prices all along the line. Lumber is dearer and labor has never been so high, but we agree to protect our patrons at present prices upon receipt of their orders at this time.

It will cost you only one cent for a postal card to get our **delivered prices on Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Foundation, Smokers, Extractors, Shipping-cases, etc.** It may mean a saving to you of many dollars. It is the natural advantage we have over others that enables us to make you the Best Price. There are no better goods than ours, and we GUARANTEE SATISFACTION or REFUND your MONEY.

Being manufacturers we buy lumber to advantage, have lowest freight-rates, and sell on manufacturer's profit basis. Let us quote you prices. Prompt shipment guaranteed.

MINNESOTA BEE-SUPPLY COMPANY,
152 Nicollet Island, Minneapolis, Minn.

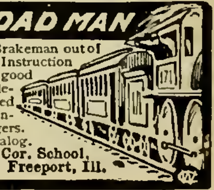
Alsike Clover Seed

Also small and large Red, Alfalfa, and Timothy Seed, for sale. Choice seed. Write for prices.

Catalog Apiarian Supplies Free. 2A3t

F. A. SNELL,
Milledgeville, - - - Illinois

BE A RAILROAD MAN



We'll make a Fireman or Brakeman out of you in short time by mail. Instruction is practical and fits you for good salary. Graduates in big demand. Only school conducted by railroad men and endorsed by railway managers. Write today for our **free** catalog.

The Wenthe Railway Cor. School,
Dept. S-R-392, Freeport, Ill.

49th Year
No. 3

March, 1909

75c. a Year
10c. a Copy

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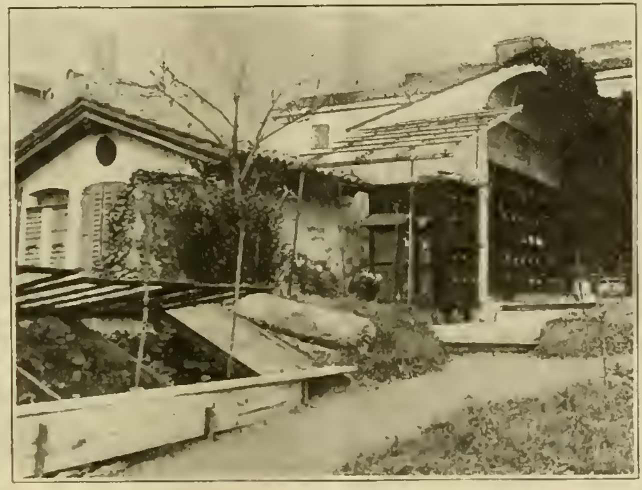

Apiary of Alex. Schroeder See Page 87.

Mass Agl College apr14
Library Amherst, Mass

Apiary of Wm. H. Horstmann, of Cook Co., Ill.

American Bee Journal

THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY

GEORGE W. YORK & COMPANY

118 W. Jackson Blvd., Chicago, Ill.

IMPORTANT NOTICE.

THE SUBSCRIPTION PRICE of this Journal is 75 cents a year, in the United States of America, (except Chicago, where it is $1.00), and Mexico; in Canada 85 cents; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec09" on your label shows that it is paid to the end of December, 1909.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your wrapper-label, which shows that the money has been received and credited.

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14 lines make one inch.

Nothing less than 4 lines accepted.

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3 times 14c a line	9 times 11c a line
6 " 12c " "	12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.

Goes to press the 6th of each month.

National Bee-Keepers' Association

Objects of the Association.

1st.—To promote the interests of its members.

2d.—To protect and defend its members in their lawful rights.

3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

☞ If more convenient, Dues may be sent to the publishers of the American Bee Journal.

"Songs of Beedom"

This is a pamphlet, 6x9 inches, containing 10 songs (words and music) written specially for bee-keepers, by Hon. Eugene Secor, Dr. C. C. Miller, and others. They are arranged for either organ or piano. The list includes the following: "Bee-Keepers' Reunion Song;" "The Bee-Keeper's Lullaby;" "The Hum of the Bees in the Apple-Bloom;" "The Humming of the Bees;" "Buckwheat Cakes and Honey;" "Dot Happy Bee-Man;" "Bee-Keepers' Convention Song;" "The Busy, Buzzing Bees:" "Spring-Time Joys;" and "Convention Song." The pamphlet is mailed for 25 cents, or sent with the American Bee Journal one year—both for only 90 cents. Send all orders to the American Bee Journal, 118 W. Jackson, Chicago, Ill.

Booking Queen-Orders for 1909

$4.00 for 6 queens; $2.10 for 3; or 75c for

A Standard-Bred Italian Queen-Bee

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

What They Say of Our Queens

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work. A. W. SWAN.
Nemaha, Co., Kan., July 15, 1905.

⁂

GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best. She keeps 9¼ Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
Ontario, Canada, July 22, 1905.

⁂

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of my best colonies. N. P. OGLESBY.
Washington Co., Va., July 22, 1905.

⁂

GEORGE W. YORK & CO.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. MCCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for $1.20. Three Queens (without Journal) would be $2.10, or 6 for $4.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

Address, GEORGE W. YORK & CO., 118 W. Jackson, Chicago. Ill,

"If Goods are Wanted Quick Send to Pouder."

ESTABLISHED 1889

Bee-Supplies. Root's Goods in Indiana.

Standard Hives with latest improvements, Danzenbaker Hives, Honey-Boxes, Comb Foundation and everything that is used in the bee-yard. Large illustrated catalog mailed free. Finest White Clover Extracted Honey for sale in any quantity desired.

WALTER S. POUDER, 859 Massachusetts Ave., Indianapolis, Ind.

Dittmer's Comb Foundation

Is the Best. Not because we say so, but because the Bees prefer it to other makes.

Dittmer's Process is Dittmer's

It has built its Reputation and established its Merits, on its own Foundation and its own Name.

We make a Specialty of Working Wax into Foundation for Cash.

Write for free catalog and prices on full Line of Supplies.

GUS DITTMER CO., Augusta, Wis.

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A Good Living From POULTRY on a City Lot

$1,500.00
IN TEN
MONTHS
From a City
Lot Only
Forty Feet
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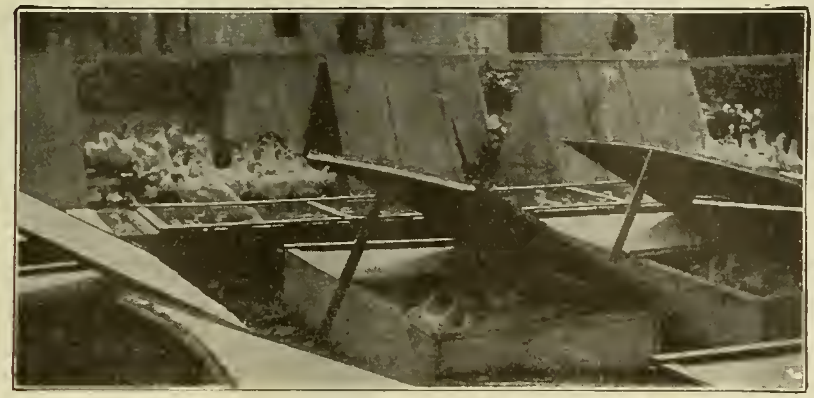


On This
Lot About
60 Breeding
Hens
Are Kept
and an
Average of
250
Chickens

THE PHILO SYSTEM

IS ESPECIALLY VALUABLE TO THE FARMER AS WELL AS THE CITY OR VILLAGE FANCIER AND IS ADAPTED TO ALL CLIMATES, ALL BREEDS AND ALL PEOPLE

The Philo System is Unlike all other Ways of Keeping Poultry

and in many respects it is just the reverse, accomplishing things in poultry work that have always been considered impossible and getting unheard of results that are hard to believe without seeing. However, the facts remain the same and we can prove to you every word of the above statement.

The New System Covers All Branches of the Work Necessary For Success

From selecting the breeders to marketing the product. It tells how to get eggs that will hatch, how to hatch nearly every egg, and how to raise nearly all the chicks hatched. It gives complete plans in detail how to make everything necessary to run the business and at less than half the cost required to handle the poultry business in any other manner. There is nothing complicated about the work and any man, woman or child that can handle a saw and hammer can do the work.

Two Pound Broilers In Eight Weeks.

Are raised in a space of less than a square foot to the broiler without any loss and the broilers are of the very best quality, bringing, here, three cents per pound above the highest market price.

Our Six-Months-Old Pullets Are Laying At The Rate Of 24 Eggs Each Per Month,

in a space of two square feet for each bird. No green cut bone or meat of any description is fed, and the food is inexpensive as compared with food others are using.

Our new book, THE PHILO SYSTEM OF PROGRESSIVE POULTRY KEEPING, gives full particulars regarding these wonderful discoveries, with simple, easy-to-understand directions that are right to the point, and fifteen pages of illustrations showing all branches of the work from start to finish.

It also tells how to make a brooder for twenty-five cents that will automatically keep all lice off the chickens or kill any that may be on them when in the brooders.

Our New Brooder Saves Two Cents on Each Chicken

No lamp is required. No danger of chilling, overheating or burning up the chickens as with brooders using lamps or any kind of fire. They also keep all lice off the chickens automatically, or kill any that may be on them when placed in the brooder. Our book gives full plans and the right to make and use them. One can be easily made in an hour at a cost of from 25 to 50 cents.

A Few Testimonials

VALLEY FALLS, N. Y. Sept. 5, 1907

It was my privilege to spend a week in Elmira during August, during which time I saw the practical working of the Philo System of Keeping Poultry and was surprised at the result accomplished in a small corner of a city yard. Seeing is believing they say, and if I had not seen, it would have been hard to believe that such results could have followed so small an outlay of space, time and money. (REV.) W. W. COX.

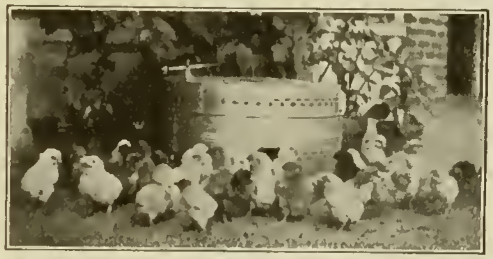
October 22, 1908.

P. S.--A year's observation, and some experience of my own, confirm me in what I wrote Sept. 5, 1907. The System has been tried so long and by so many, that there can be no doubt as to its worth and adaptability. It is especially valuable to parties having but a small place for chickens; seven feet square is plenty for a flock of seven. (REV.) W. W. COX

RANSOMVILLE, N. Y., Dec. 5, 1908.

DEAR SIR:--Last Spring we purchased your book entitled the "Philo System" and used your heatless brooders last spring and summer. The same has been a great help to us in raising the chix in the health and mortality. The chix being stronger and healthier than those raised in the brooders with supplied heat. We believe this brooder is the best thing out yet for raising chix successfully. We put 25,000 chix through your heatless brooders this last season and expect to use it more completely this coming season. We have had some of the most noted poultrymen from all over the U. S. here, also a large amount of visitors who come daily to our plant and without any exception they pronounce our stock the finest and healthiest they have seen anywhere this year.

Respectfully yours,
W. R. CURTISS & COMPANY



ARE THEY WORTH SAVING?

Don't Let the Chicks Die in the Shell

One of our secrets of success is to save all the chickens that are fully developed at hatching time, whether they can crack the shell or not It is a simple trick, and believed to be the secret of the Ancient Egyptians and Chinese which enabled them to sell the chicks at 10 cents a dozen. It takes but a minute to save a chick and no skill required.

Note What Others Say of This "Trick of the Trade"

RINGWOOD, ONT., CAN., May 6, 1908.

DEAR SIR;--Some time ago I got the Philo System and must say it is the best book I ever read on Poultry. I have tried the "Trick of the Trade" and saved twenty-two chickens which otherwise would have died.

Yours truly, ROY MOYER

BETHLEHEM, PA., April 25, 1908.

DEAR SIR:--Your book safely to hand, and have derived great benefit from it, especially "A Trick of the Trade." Respectfully yours,
G. H. STANIFORTH

POTOMAC, ILL., May, 1908.

DEAR SIR:--I am using your System of Progressive Poultry Keeping and consider it the best work on Poultry Raising I ever read. In my last hatch I saved twenty-three chickens by following the article, "A Trick of the Trade."

Yours truly. FRED JANISON

Send $1.00 and a copy of the latest revised edition of the book will be sent you by return mail.

Address, E. R. PHILO, Publisher, 420 Third Street, Elmira, N. Y.

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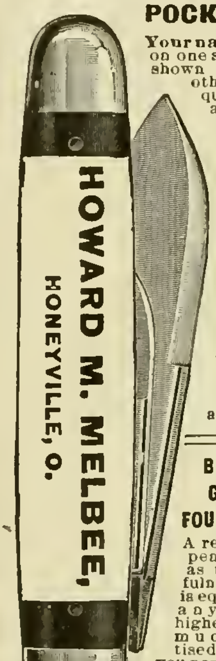
AMERICAN BEE JOURNAL

Sample copies free to help you interest your friends and get subscriptions. If you will send us names of your neighbors or friends we will mail them sample copies free. After they have received their copies, with a little talk. you can get some to subscribe and so either get your own subscription free or receive some of the useful premiums below. They're worth getting. We **give you a year's subscription free** for sending us **two new** subscriptions at 75 cents each.

BEE-KEEPERS' NOVELTY POCKET-KNIFE

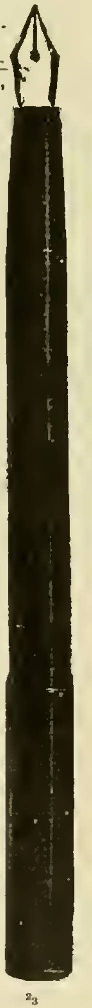


Your name and address put on one side of the handle as shown in cut, and on the other side pictures of a queen-bee, a worker, and a drone. The handle is celluloid and transparent, through which is seen your name. If you lose this knife it can be returned to you, or serves to identify you if you happen to be injured fatally, or are unconscious. Cut is exact size. Be sure to write exact name and address. Knife delivered in two weeks. Price of knife alone, postpaid, $1.25, With year's subscription, $1.75. **Free** for 4 new 75c subscriptions.

BEE-KEEPERS' GOLD-NIB FOUNTAIN PEN

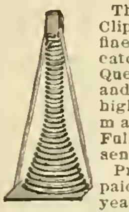
A really good pen. As far as true usefulness goes is equal to any any of the higher-priced, much-advertised pens. If you pay more it's **name** you're charged for. The Gold Nib is guaranteed 14 Karat gold, Iridium pointed. The holder is hard rubber, handsomely finished. The cover fits snugly, and can't slip off because it slightly wedges over the barrel at either end This pen is non-leakable It is very easily cleaned, the pen-point and feeder being quickly removed. The simple feeder gives a uniform supply of ink to the pen-point without dropping, blotting or spotting. Every bee-keeper ought to carry one in his vest-pocket. Comes in box with directions and filler. Each pen guaranteed. Here shown two-thirds actual size.

Price alone, postpaid, $1.25. With a year's subscription, $1.75. **Given free** for 4 new subscriptions at 75 cents each.



⅔ Size.

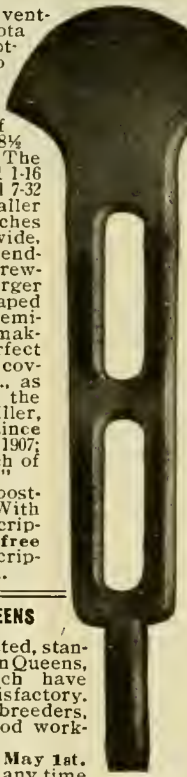
MONETTE QUEEN-CLIPPING DEVICE



The Monette Queen-Clipping Device is a fine thing for use in catching and clipping Queens' wings. Four and one-half inches high. It is used by many bee-keepers. Full printed directions sent with each one.

Price alone, postpaid, 25 cents. With a year's subscription, 90 cents. **Given free** for sending one new subscription at 75 cents.

IDEAL HIVE-TOOL



Exactly half actual size.

A special tool invented by a Minnesota bee-keeper, adapted for prying up supers and for general work around the apiary. Made of malleable iron, 8¼ inches long. The middle part is 1 1-16 inches wide and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screw-driver. The larger end is wedge-shaped having a sharp, semi-circular edge, making it almost perfect for prying up covers, supers, etc., as it does not mar the wood. Dr. Miller, who has used it since 1903 says, Jan. 7, 1907: "I think as much of the tool as ever."

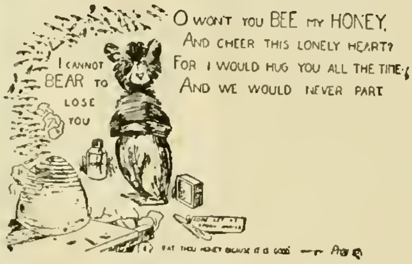
Price alone, postpaid, 40 cents. With a year's subscription, $1.00. **Given free** for 2 new subscriptions at 75c each.

PREMIUM QUEENS

These are untested, standard-bred Italian Queens, reports of which have been highly satisfactory. They are active breeders, and produce good workers.

Sent only after May 1st. Orders booked any time for queens. Safe delivery guaranteed. Price, 75 cents each, 6 for $4.00, or 12 for $7.50. One queen with a year's subscription, $1.20. Queen **free** for 3 new 75c subscriptions.

HUMOROUS BEE POST-CARDS


O WON'T YOU BEE MY HONEY.
AND CHEER THIS LONELY HEART?
FOR I WOULD HUG YOU ALL THE TIME,
AND WE WOULD NEVER PART
I CANNOT BEAR TO LOSE YOU

A "Teddy Bear" on good terms with everybody, including the bees swarming out of the old-fashioned "skep." Size 3½x5½, printed in four colors. Blank space 1½x3 inches for writing. Prices—3 postpaid, 10 cents: 10 for 25 cents. Ten with a year's subscription, 90 cents. Six **given free** for one new 75c subscription.

BOOKS FOR BEE-KEEPERS

Forty Years Among the Bees, by Dr. C. C. Miller.—334 pages, bound in handsome cloth, with gold letters and design, illustrated with 112 beautiful half-tone pictures, taken by Dr. Miller. It is a good, new story of successful bee-keeping by one of the masters, and shows in minutest detail just how Dr. Miller does things with bees. Price alone, $1.00. With a year's subscription, $1.50. **Given free for 3** new subscriptions at 75 cents each.

Advanced Bee-Culture, by W. Z. Hutchinson.—The author is a practical and helpful writer. 330 pages; bound in cloth, beautifully illustrated. Price alone, $1.20. With a year's subscription, $1.70. **Given free** for 4 new subscriptions at 75 cents each.

A B C & X Y Z of Bee Culture, by A. I. & E. R. Root.—Over 500 pages describing everything pertaining to the care of honey-bees. 400 engravings. Bound in cloth, price alone, $1.50. With a year's subscription, $2.00. **Given free** for 6 new subscriptions at 75 cents each.

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—How the very best queens are reared. Bound in cloth and illustrated. Price alone, $1.00. With a year's subscription, $1.50. **Given free** for 4 new subscriptions at 75 cents each. In leatherette binding, price alone, 75 cents. With a year's subscription, $1.25. **Given free** for 2 new subscriptions at 75 cents each.

Bee-Keeper's Guide, or Manual of the Apiary, by Prof. A. J. Cook.—This book is instructive, helpful, interesting, thoroughly practical and scientific. It also contains anatomy and physiology of bees. 544 pages, 295 illustrations. Bound in cloth. Price alone, $1.20. With a year's subscription, $1.70. **Given free** for 4 new subscriptions at 75 cents each.

Langstroth on the Honey-Bee, revised by Dadant.—This classic has been entirely rewritten. Fully illustrated. No apiarian library is complete without this standard work by "The Father of American Bee-Culture." 520 pages, bound in cloth. Price alone, $1.20. With a year's subscription, $1.70. **Given free** for 4 new subscriptions at 75 cents each.

"The Honey-Money Stories."—A 64-page booklet containing many short, bright stories interspersed with facts and interesting items about honey. The manufactured comb-honey misrepresentation is contradicted in two items, each occupying a full page. Has 33 fine illustrations of apiaries or apiarian scenes. It also contains 3 bee-songs. This booklet should be placed in the hands of everybody not familiar with the food-value of honey, for its main object is to interest people in honey as a daily table article. Price 25 cents. With a year's subscription, 90 cents. **Given free** for one new subscription at 75c.

Three copies for 50 cents: or the 3 with a year's subscription, $1.00; or the 3 copies **given free** for 2 new subscriptions at 75 cents each.

Amerikanische Bienenzucht, by Hans Buschbauer, is a bee-keepers' handbook of 138 pages, which is just what our German friends will want. It is fully illustrated and neatly bound in cloth. Price alone, $1.00. With a year's subscription, $1.50. **Given free** for 3 new subscriptions at 75 cents each.

THE EMERSON BINDER

A stiff board outside like a book-cover with cloth back. Will hold easily 3 volumes (36 numbers) of the American Bee Journal. Makes reference easy, preserves copies from loss, dust and mutilation. Price postpaid, 75 cents. With a year's subscription, $1.25. **Given free** for 3 new subscriptions at 75 cents each.

WOOD BINDER

Holds 3 volumes. Has wood back but no covers. Price, postpaid, 20 cents. With a year's subscription 80 cents. **Given free** for one new subscription at 75 cents.

BEE-HIVE CLOCK

A few of these handsome "bronze-metal" clocks left. Base 10½ inches wide by 9¾ inches high. Design is a straw skep with clock face in middle. Keeps excellent time, durable and reliable. Weight, boxed, 4 pounds. You pay express charges. Price $1.50. With a year's subscription, $2.00. **Given free** for 6 new subscriptions at 75 cents each.

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L. L. LANGSTROTH
CHAS. DADANT

AMERICAN BEE JOURNAL

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GEORGE W. YORK, Editor — CHICAGO, ILL., MARCH, 1909 — Vol. XLIX—No. 3

Editorial Notes and Comments

Most Important Thing for Beginners

If one is to succeed in bee-keeping it is necessary that he should know something about what items form the most important factors in making for success. Without pasturage for the bees, success is impossible. A good hive is better than a poor one. There are strains of bees that will give double the profit that others will. And so one might go on adding to the list. If a number of experienced bee-keepers were each asked to make out such a list, perhaps no two lists would be exactly alike. But one thing would most certainly be found in every list. It might be called by different names, "a bee-book," "a text-book," "a book of instruction about bees," or what-not, but all would mean the same thing.

Just think what it would mean to a beginner if he should have the advantage of asking all the questions he liked of some veteran in bee-keeping. A book of instruction in bee-keeping does more than this. It answers the questions he would be likely to ask, and also many others that he would not think to ask; and yet these latter might be the most important for him to know. To make the best of one's bees, one should have some knowledge of their management before actually undertaking the work, so the wise beginner will have a book of instruction *before* getting the bees.

Unfortunately there are many who begin bee-keeping without any book as a guide. Quite a number of those who thus begin find out in some way that there are papers published that treat upon bee-keeping, and subscribe for one or more, whereas a bee-book would be the right thing if both book and paper can not be had. It is to the interest of the American Bee Journal to get all the subscribers possible, but truth compels the statement that if a beginner has not money enough for both the book and the paper, the book should by all means have the preference. Although, of course, he ought to have both.

Even with a single colony, some mistake may be made, either by doing the wrong thing or failing to do the right thing, which would have been avoided if a book had been previously studied, and that mistake may cost more than the price of a book. With more years and more colonies the price of the book will be paid many times over. Too much emphasis can hardly be placed upon the importance of a good bee-book to every beginner.

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Size of Bees

Some time ago not a little was said as to getting bees of larger size, in the hope of getting larger crops of honey. Some, however, were of the opinion that increased size does not necessarily mean increased crops. Prof. Graf (Prak. Wegweiser) says that, just as it happens among men, that men under size often accomplish the most, so it is among bees. He has been breeding from the best, and it so happens that his best bees are under the average in size.

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Drone-Comb in Supers

As a matter of economy, some practice giving shallow starters to swarms instead of full sheets of foundation. Then, to avoid rearing a big lot of drones, all drone-comb built in these brood-frames is used in extracting-supers. This is considered an advantage, as the larger cells certainly allow a little cleaner extracting with the same rate of speed. But as there is always a lack of drone-comb in the brood-chamber, viewed from the stand-point of the bees, they seem to think that this drone-comb should be reserved for the use of the queen; so it hinders to some extent the storing of honey in extracting-combs.

There is nothing like testimony from actual experience, and Wm. L. Cooper, in Gleanings, says:

> "I have had considerable experience along this line, and my conclusions are against drone-comb as a rule. I have several times under-estimated the amount of foundation needed, and had to start swarms on starters. Result, a lot of drone-combs which I placed above excluders in extracting-supers. As a general thing, bees store in the worker-cells, leaving the drone-cells clean and polished, ready for the queen to lay in if she can get at them. If they are crowded they will store in them; and, indeed, they generally start to fill them about as soon as they start capping the worker-cells. The only exception to this rule, I have noticed, is in the case of a freshly-hived swarm, which will store in drone-comb freely."

Perhaps those are right who say: "It is nothing short of a piece of extravagance to have anything less than full sheets of foundation both in brood-frames and sections."

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Co-operation in Michigan

Said co-operation is only in the bud yet, but it may bloom and bear fruit. E. B. Tyrrell, in the Bee-Keepers' Review, proposes that the Michigan Bee-Keepers' Association become a stock company, organized under the State laws. Stock is to be issued at $10 a share, although each member is to have the marketing privileges if he pays only his annual fee of $1.00. At Detroit is to be a central depot, with a manager; Directors to meet at the close of the harvest and agree upon the price for honey, to be sent out as advice. Each member is to have control of his own honey, even after it is sent to Detroit. Editor Hutchinson seems to think co-operation might succeed as well in Michigan as in California and Colorado. Success to the Wolverines.

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The "J. G. D. Hive"

The Rev. J. G. Digges is the editor of the Irish Bee Journal. He is also the author of "The Irish Bee Guide," a book which has called forth the warmest commendations, and some of his friends think he should invent a hive to be named "The J. G. D. Hive." It has not yet materialized, but he has got so far as to give quite a full description of the hive that he has *in his head.* Without giving the full description, the following excerpt, giving just one item, may serve to show how far ahead of all other hives is to be the "J. G. D.":

> "An external gear, operating in the roof gable, would revolve the brood-nest at any speed required, and setting in motion a special uncapping apparatus within, would extract the honey without disturbance of the frames, and would cause all foraging bees to regurgitate immediately upon their return, the honey and and crude nectar discharging underneath into a ripening tank, kept up to a temperature of 66 degrees by a novel process of heat dispersal from the agitated bees within. At a speed of 30 revolutions per second, artificial swarms would be thrown out in any season, at a moment's notice, by the centrifugal force developed. A slower motion, keeping the position of the entry constantly changed, would render attacks by robber-bees impossible."

But after detailing the great advantages of the hive, Editor Digges is not blind to the inconvenience that would arise from the introduction of the best hive in the world—the great loss from consigning to the scrap-heap the whole outfit already on hand of hives at present in use. Then he thinks of the possibility that some one might be so foolishly blind to his own interest as not to adopt the "J. G. D. Hive." Of such a one he says: "His wife and family would repudiate him as an ass. His acquaintances would look askance at him on the roadside, and would say one to another—'Lo! there is the idiot who hasn't a "J. G. D. Hive."' * * * And his bees would swarm, and cast, and hunger-swarm, and would hie them to other apiaries, where self-respecting bees would congregate in 'J. G. D. Hives.'"

At the thought of bringing such calamity upon any human being, his tender heart is appalled, and so it is to be feared that the only place where the great "J. G. D. Hive" will ever be seen is on the pages of the Irish Bee Journal.

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Pointer to Those Buying Queens

A question of importance that often comes up may be worded after this fashion: "Would you advise me to buy a tested or an untested queen?" The usual answer is: "A tested queen—she will cost you more: but you are more certain of having good stock, and you can afford to pay the extra price for that certainty."

But there's another question that might be asked: "Is it better to buy a tested queen, or to put the same amount of money into untested queens?" A concrete example of this nature occurs in Gleanings. G. C. Greiner was to have 30 untested daughters of a certain choice queen, but the death of this queen intervened to prevent, and in place of the 30 untested queens for $30, he was offered 6 of her tested daughters for the same money. Editor Root says:

> "But he replied by saying he would much prefer to pay $30, the amount he has appropriated, for 30 untested queens from an extra-choice breeder than for 6 extra-select queens from that same breeder at $5 each. His argument was this: That out of the 30 untested he could himself select at least five or six queens that would be the equal of our $5 queens; and, besides, have all the others, two dozen, ranging in valuation from $2 to $3. No, it did not pay him to buy high-priced queens; but he thinks it is a good practice to lay in a good stock of choice untested queens from a fine breeder, and Mr. Greiner is right."

◆

Shallow Chamber Below Brood

John Silver makes use of this in a way that some may think worth considering. He says, in the Irish Bee Journal:

> "In working for sections in an out-apiary, I use a reversible bottom-board which will admit of a 3-inch shallow frame under the brood-chamber and below the level of the entrance. These 3-inch shallow frames are placed on top at first, to catch the early gathered honey and to enable the brood-chamber to be filled with brood right to the top-bar; the first section-rack is put between these and the brood, and as soon as the sections are well started these shallow frames are placed below the brood. This plan will work well every time. (1) It makes a much larger brood-nest available early, and right up to the top-bar; (2) bees are certain to take at once to the sections; and (3) it gives them an overflow chamber at the right moment to prevent swarming."

This is something after the manner of the "eke" that is a constituent part of the "W. B. C." hive, as described in the latest edition of the British Bee-Keepers' Guide, page 46. Mr. Cowan says this eke, "3 inches deep, when placed below the shallow-frame box, converts the latter, on an emergency, into a temporary brood-chamber. This 'eke' can be used below the body-box in winter, or inverted and used above in spring, for tucking in wraps and making all snug and comfortable."

Miscellaneous News-Items

Indiana Foul Brood Law Passes

We have received the following brief but "rejoiceful" letter, dated March 5, from Mr. Pouder, of Indianapolis:

> DEAR MR. YORK:—Our foul brood measure is now a *law.* This is certainly good news for Indiana.
> Rejoicingly,
> WALTER S. POUDER.

We congratulate Indiana bee-keepers on their success. We hope the time may soon come when every State will have a much-needed foul brood law.

◆

The Next Meeting of the National

We have received communications from Mr. J. J. Measer, of Kansas, and E. E. Lawrence, of Missouri, suggesting that the next meeting of the National Bee-Keepers' Association be held in Kansas City. Sioux City, Iowa, has also been mentioned as a suitable place for the meeting. And there has been quite a call from the far West for the next meeting of the National, especially in the region of Salt Lake City. The Grand Army of the Republic is to meet there August 9 to 14. The round-trip rate from Chicago at that time will be $37.40, with a 30-day limit, and stop overs at any points on the return trip. No doubt a proportionate rate will apply to various parts of the whole United States.

Many will remember that some years ago the National followed the Grand Army, and always had a good attendance on account of the very low rate on all the railroads. The National has never met in Salt Lake City, and, in fact, has had only one meeting west of Denver, and that was in 1903, when it went to Los Angeles, Cal. Personally, as a member of the Executive Committee of the National, we have very little choice as to the next place of meeting for the National Bee-Keepers' Association, except that we think it should go west of the Mississippi River, as it has met in the East the last two years, and the year before that in San Antonio, Tex. No doubt the Executive Committee will soon canvass the applications and suggestions as to place for the next meeting, and decide, so that all bee-keepers who would like to attend it may begin to make their arrangements for being there.

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A Mummified Lizard in a Hive

Some time ago Mr. C. T. Wise, of Acton, Calif., sent us a lizard that a colony of bees had covered with propolis in their hive. It is quite a curiosity. Mr. Wise wrote the following letter at the time:

> EDITOR AMERICAN BEE JOURNAL—
> I send under separate cover a small California lizard or "swift," that I found "mummified" in one of my colonies of bees. The little animal had evidently entered the hive at the front and run to the rear, where it had been killed by the bees, and then encased in propolis so as to preserve it in its present condition. It was somewhat of a curiosity to me, and I thought it might be interesting to you.
> C. T. WISE.

We wish to thank Mr. Wise for his thoughtfulness in sending us the specimen referred to. We took it to the last meeting of the Chicago-Northwestern Bee-Keepers' Association for the inspection of those who were present. We also read there the above letter sent by Mr. Wise.

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Apiculture in the United States

We have received from Dr. E. F. Phillips, In Charge of Apiculture, at Washington, D. C., Bulletin No. 75, Part 6, being "The Status of Apiculture in the United States." It was issued January 25, 1909, and can be secured for 5 cents by addressing the Superintendent of Documents, Government Printing Office, Washington, D. C. (Postage stamps are not accepted.)

The pamphlet is a very complete one, indeed, as it covers a great many points of interest not only to bee-keepers, but to every one else at all interested in the resources of our country.

According to the census of 1900, the average number of colonies among farmers reporting them, was 5.8, valued at $14.40; and the number of those who rely wholly on the production of honey and beeswax for a livelihood is very small.

Referring to the extent of the industry of bee-keeping in this country, the pamphlet says that the average value of honey produced annually, is $20,000,000; of beeswax, about $2,000,000.

MR. J. E. THORSTAD AND APIARY.

There are in the United States over 700,000 bee-keepers.

The annual importation of honey amounts to about 2,500,000 pounds, and that of beeswax, about 700,000 pounds.

The honey-bee probably does more good to American agriculture as a pollenizing agent than as a honey-producer.

We might go on making other extracts from the pamphlet referred to, but would prefer that each of our readers should order it for himself, and thus get the benefit of everything contained in the pamphlet, which is worth many times the small amount of 5 cents asked for it.

◆

Bee-Keeping in Hawaii

Bulletin No. 75, Part 5, issued January 19, 1909, by the Department of Agriculture at Washington, D. C., is "A Brief Survey of Hawaiian Bee-Keeping." It gives a very complete account of bee-keeping on the Hawaiian Islands, which, although one of the minor industries, is being conducted with profit. Dr. E. F. Phillips, In Charge of Apiculture, so well known to our readers, prepared the pamphlet, which can be had for 15 cents by addressing the Superintendent of Documents, Government Printing Office, Washington, D. C. (Postage stamps are not accepted.)

The pamphlet contains a map of the Hawaiian Islands, and is nicely illustrated. It is an exceptionally interesting production, and no doubt every one of our readers will be pleased to have a copy. It is nice for bee-keepers to know about every part of the United States and its island possessions along the honey-producing line.

We will not attempt to report very much from this pamphlet, excepting to say that the total number of colonies in the Hawaiian Islands is about 20,000, and the annual output of honey, practically all of which is extracted, is probably 600 tons, although the crop for 1908 may be nearly 1000 tons according to a recent report from the Hawaiian entomologist.

It seems the apiaries are run by corporations owning several thousand colonies each. They are organized so that their bee-supplies are purchased in carlots, and their honey is also sold in a similar manner.

We would advise all of our readers who are sufficiently interested, to send to Washington not only for the pamphlet on Hawaiian bee-keeping, but also for the one mentioned in another item, the one on bee-keeping in the United States.

◆

Apiary of J. E. Thorstad

The honey season this year was very good. I got 4,000 pounds from 40 colonies, spring count, and have now 53 colonies left in good condition.

Enclosed please find postal which contains my picture and 7 supers with 33 pound-sections in each super, or 231 pound-sections. This was all filled by one colony of bees. It shows that my supers are made differently from others, as I manufacture them myself. There is a glass place in each end, which makes it possible to see when the sections become full of honey.

J. E. THORSTAD.

Blair, Wis., Dec. 18.

◆

Simmins' Uncapper

The English expert, Samuel Simmins, has patented in Great Britain, America, and other countries a multiple uncapper that is figured and described in the Irish Bee Journal. Both sides of the comb are uncapped at the same time. On each side is a series of triangular knives, reminding one of the cutter-bar of a mowing machine. It looks as if it might be somewhat expensive.

◆

A Letter from Austria

We have received the following from Mr. Alex. Schrœder, who visited us last fall:

DEAR MR. YORK:—Returned from my short visit to the United States, I feel it my duty to thank you and all your countrymen I had the pleasure to meet, for the cordial and friendly reception I found all over the country, which showed me land and people in a very fair light.

I called upon Dr. Miller, in Marengo, and Mr. Horstmann, in Chicago, and was so fortunate as to make the personal acquaintance of the former and family, while I was very sorry not to meet Mr. Horstmann, he being absent from home, but was well received by his good lady and son, who showed me his bee-yard and work-shop which I found fully up-to-date and very interesting. Young "Leslie" opened one of the hives having a side glass, and showed us a very fine and strong Italian colony.

In Marengo we found Dr. Miller and family very busy scraping sections, of which they had taken over 19,000; and we had the pleasure of seeing the various implements in bee-keeping used with you; for instance, a machine to stick foundation into the sections, which being very simple, is sure to last long and to satisfy the worker.

In Washington we met Mr. Benton, whom we knew for so many years, ever since he first came over to Europe with D. A. Jones, of Canada, to get the Cyprian bee, which I had provided to Mr. Cari, in Bruex, Bohemia, and Count Kolowrat, Tabor, Bohemia, some years before. He was very interesting, and showed us through the beautiful city of Washington; and we also had the pleasure to see one of his apiaries in Virginia, near Clarendon.

I thank you all for your kind reception, and am very glad I have seen at last some of the American bee-keepers and bee-keeping with which I was in touch for so many long years through the "old reliable" American Bee Journal.

On my arrival home I found my bees all right, and only in need to be packed up for winter, which I do with old bags and newspapers. My hives are on the Dzierzon principle, mostly 3 stories high, and can be built up to very strong colonies. I also have hives which can be built up to 40 frames of about 25 centimeters square. The largest "take" I ever got from one colony was Kilog. 42 (equal to about 83 pounds), and in one year I had an average of K. 10 (or about 22 pounds) per colony, fall count. My apiary is near the town, and the building of houses continues all around our villa, so that in not a very long time we shall become town-folks, and then the crops of honey will, of course, be reduced still more. But as long as my bees find enough for their winter feed, I will not give up this hobby which I have practised now for over 34 years, and, except for the stinging, which nobody likes, I have found it full of interest and pleasure.

At your request I enclose a picture of my apiary. The shade is in front (facing south) and the bee-house more to the left on which a disk is attached, showing a bee in the center, and around is the inscription, "Il mio non sol' ma l'altrui ben procuro," the motto of the Italian Central Association of Bee-Keepers in Milan, which has about the same meaning as the motto on the button you presented to me, "Our toil doth sweeten others."

In the front wall 4 large hives are fixed, which face west and are handled from the inside in a room, from which the bees escape through a turning window. I can increase the number of my colonies up to 50. Fifty-three was my largest number, but during the last years I have reduced the number to between 30 and 40.

I run only for extracted honey, which friends of mine take as fast as produced, at a crown per 500 grams (11 cents per pound) in glass jars. This price has been the same ever since I have been selling honey, and when today there is a demand for honey in Trieste (a town of over 200,000 inhabitants) it is in consequence of my slow but steady work for the benefit of bee-keepers in general.

The house has also a lower room where the bee-work is done, as pressing and sticking the foundation into the frames, extracting, etc.

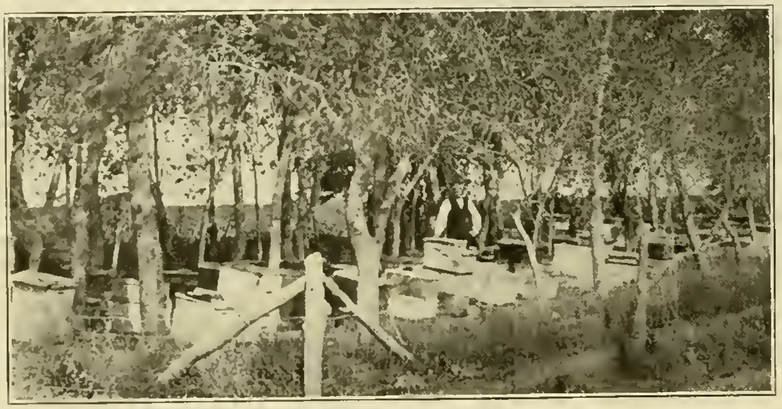
In the shade are 30 hives capable of 24, 20, and 16 frames, according to the strength of the colonies. In the rear is an old cement filter turned downward like a straw skep, and makes the home of a strong colony; also an old queen-rearing box from Sartori, in Milan; all other hives have, as a matter of course, the same frames, which I can interchange and reverse at pleasure. With the colonies I have, I have built up quite a library on bees, consisting of books and treatises on bee-keeping summing up to over 300 volumes, besides a goodly number of journals. American bee-literature makes a fair number of these.

In this country flows of honey, as it is the fashion with you, are about unknown. We have fair honey-producing plants, and some countries in Austria have also very good honey crops, but "takes" as sometimes reported from your country sound like fairy tales to us.

Alex. Schroeder.

Trieste, Austria, Dec. 15, 1908.

The picture of Mr. Schrœder's apiary appears on the front page of this number. Mr. and Mrs. Schrœder visited the United States last fall, and got as far west as Chicago and Marengo, Ill.



Apiary of G. N. McMannan, of Carlton, Colo.

We are sure our readers will enjoy reading the foregoing letter, and also be glad to learn of the safe return of Mr. and Mrs. Schrœder to their beloved homeland.

Apiary of G. N. McMannan

I am yet young at the bee-business and have only 150 colonies in the yard of which I will send you a picture. I extract the most of my honey. My crop was light this year (1908)—about 3,000 pounds. I can sell all of my honey at 10 cents per pound.

G. N. McMannan.

Wax From Scrapings

On page 5 was an editorial on this subject, and an instance was given in which about an ounce of wax was obtained from each pound of scrapings, the wax being of poor quality. This would not give very great encouragement toward this sort of saving, although it was there stated that scrapings of a different quality might have given a different result. It is a pleasure to be able to give an instance of what may very likely be nearer the usual, from a very good authority, Mr. F. Greiner. Let it be noted that in this case, instead of being of poor quality the wax was very fine. Mr. Greiner says:

> I notice what you say in the "Editorial Comments" in last issue about propolis and wax. My experience is somewhat different. For several years I made it a practise to save all scrapings from sections and section-holders, wide frames and supers. One time I had nearly a kettleful, perhaps 2 gallons. I placed this on the stove while I was busy doing other work, and from time to time, after the wax had melted, I turned off the wax, which, being lighter than the propolis, would come to the top and separate. I worked away thus till but little more wax seemed to be contained in the molten mass, when I poured the remainder out on a board. When I weighed the wax I had nearly 2 pounds, and the color was a beautiful yellow, of much better quality than what I obtain from the steam press.

A Long Sting!

Prak. Wegweiser reports that a boy working near bees happened to be stung at the same instant in both ears. Howling with pain he yelled, "Gracious Peter! I didn't know a bee had a sting long enough to reach through from one ear to the other!"

To Keep Ants Out of Hives

Bert H. Masters, in Gleanings, puts his hives on stands or benches with ashes under the stands to keep the grass from growing, and under each leg of the stands places a small lid filled with pine tar. This needs replenishing about twice during the summer.

Raspberry Honey Granulating

Complaint is made in The British Bee Journal that in the famous Blairgowrie district raspberry honey "granulates very rapidly in the combs, and sections in consequence will not keep all winter." Complaint of that kind has not been made here. Perhaps the kind of honey was not to blame, for in the same place clover honey has the same fault, according to the same writer.

Intelligence of Bees

Gaston Bonnier, the great French authority, put pieces of sugar in his garden. The bees could not bite off any of it, but he marked the ones that tried. He watched them fly to their hive and later return with reinforcements, stopping on their way at a watering-place, where they secured enough water to moisten the surface of the sugar. Other experiments have convinced him that bees making a "find" convey the intelligence to others, and the number of bees then sent out is in proportion to the amount of treasures.

Honor to an Apicultural Leader

The University of Berne has named the Swiss leader, Ulrich Kramer, "Ehrendoktor" (the honorary title of Doctor) in consideration of his scientific and practical services to bee-culture. A well-deserved recognition.

Crimson Clover Honey

Crimson clover yields honey of uniform quality; it is about on a par with buckwheat, and neither is satisfactory where honey for later use is worked for."—*British Bee Journal.*

Can any one tell us whether crimson-clover honey in this country is as dark as buckwheat?

Foul Brood and Damp Climate

It is suggested, in the Irish Bee Journal, that Ireland suffers so severely from foul brood because of its damp climate, and reference is made to dry climates where foul brood is unknown. But, good friends, Colorado is noted for its dry climate, and foul brood rages there. Much the same may be said of California. Foul brood may be unknown in South Africa, but not because of its dry climate.

Foul Brood Laws for Iowa and South Dakota

We have received the following in regard to foul brood laws for the States of Iowa and South Dakota:

Editor American Bee Journal—

In the February issue of the American Bee Journal there is an item by F. L. Shawler, of Silver City, Iowa, in regard to a foul brood law for the State of Iowa.

At the third annual convention of the Western Honey-Producers (a tri-State association) held at Sioux City, January 20 and 21, 1909, we had two foul brood laws drafted, one for Iowa and one for South Dakota. The South Dakota law is passed, and we are working hard for the Iowa law, which is being pushed by Representatives Stoddard, of Mills Co., and W. L. Harding, of Woodbury Co. We will get the law if we can have the support of the bee-keepers all over Iowa, and would be glad of any assistance the American Bee Journal could give in getting bee-keepers to write to their local representatives.

Mr. N. E. France was present at our convention in Sioux City, and helped draft the laws referred to.

We are hoping to have a State bee-keepers' association established next fall for Iowa, and also a Department of Apiculture in connection with the State College at Ames.

Edward G. Brown.

Sergeant Bluff, Iowa, March 8.

We hope that every bee-keeper in Iowa will do everything possible to help secure the foul brood law referred to by Mr. Brown. Surely, every reader of the American Bee Journal in that State will do all he can to help. Write to your members of the Iowa legislature.

We wish to congratulate the South Dakota bee-keepers on their success in securing a foul brood law so speedily.

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Hives in Winter—Swarming.

Dear Miss Wilson:—I have never kept bees before, and I would like to ask a few questions.

Are the hives to be entirely closed during the winter, or is the opening to be free so as to allow the bees to come out? We have had a few warm days which have brought the bees out, and I found a great many dead bees near the hives.

How can one distinguish the queen-bee from the rest?

What time do they swarm?

Does swarming have any effect upon the amount of honey that is stored?

Is there any way to prevent bees from swarming?

Mrs. R. Smith.

Detroit, Mich.

Hives must never be entirely closed in winter. The amount of opening depends upon circumstances. As far north as you are, if bees are wintered outdoors, the opening at the entrance should be small, say 4 inches, or perhaps as much as 8, by ⅜, while 'way down South far enough, the full entrance should be given. But if bees are kept in the cellar (and cellaring is likely the best thing for you), then you can not have too large an entrance. Our bees in the cellar have an entrance 12 by 2 inches. If you shut bees up entirely, the air in the hive will become foul, and, besides, some bees will try to get out at times, and when they find they can not it is said they raise a hue and cry, stirring up the whole community, and bees should be kept just as quiet as possible in winter.

Don't worry too much about seeing dead bees about the hive after a warm day in winter. Bees are dying off from old age all the time, and they better die out of the hive than in. If a colony is half as strong in spring as it was in the fall, be thankful.

At the time when a queen is laying—you will hardly be looking for her at any other time—she is quite a bit larger than other bees. Her abdomen, or soft hind part, is longer than her wings, which is not the case with workers. You will not be likely to make any mistake the first time you see her.

In your locality, a colony may swarm in the time of fruit-bloom. Rarely, however, until white clover is in bloom, say somewhere in the first part of June.

Yes, indeed, swarming has a big effect on the honey crop. If we only had bees that never swarm, bee-keeping would be three times as easy. Take a colony that would produce 100 pounds of honey if it didn't take a notion to swarm, and if it swarms at right time it may not produce a pound of honey. To prevent *all* swarming is a problem that is generally too much for the veterans, and perhaps it is hardly worth while for you to tackle it until you are a little better seasoned. The most that is generally attempted is to prevent all swarms after the first, which is not such a difficult matter. When the swarm issues, hive it and set it on the old stand, putting the old hive close up against it. A week later, move the old hive 6 feet away—farther will be better. That will throw all the field-bees into the swarm, weakening the mother colony so it will give up further swarming. The swarm will be strong, and from it you ought to get your honey, if the season is good.

Now let me answer a question you haven't asked. Yes, it will be the most profitable investment you can make to buy a bee-book. You will learn more in one year with it than you would in 10 without it. Without first studying some good text-book you are pretty sure to make mistakes, and even with only a single colony you might make a mistake that would cost you twice the price of a book. Yes, indeed, it will pay you well to buy such a book. Then you will still have plenty of questions to ask, and your questions will always be welcomed in this department. Success to you.

* * *

Honey-Tea for Indigestion.

Our good friend, Miss Sadie A. Butts, sends the following, taken from the Michigan Christian Advocate:

"Honey is a medicinal curative agent, with bland, healing, feeding, fattening, nerve-soothing properties of the highest value in disease." So writes Archibald Hope, of Macclesfield, in an interesting booklet just issued, entitled "Honey and Health." Honey, he explains, is "nature's form of sugar," and claims that honey-tea will cure indigestion, and that if taken hot an hour before meals is a remedy for dyspepsia. "Honey-tea" is made by dissolving a tablespoonful of honey in a cup of freshly boiled water. The "tea" should be sipped as hot as possible, three or four times a day, before meals. Many types of colds, coughs and sore throats, Mr. Hope says, may be cured by honey.

* * *

Education and Bee-Keeping.

It seems that education and bees go more or less together in California. The following clipping concerning the daughter of one of the best known bee-keepers has been sent by Charles Trout, who, by the way, is obtaining an education by the production of honey:

GETS EDUCATION BY KEEPING BEES.

Rearing and selling queen-bees is the novel way which Miss Flora McIntyre, a student at the University of California, has adopted to work her way through college.

Miss McIntyre is now in her senior year at the university here, and will be graduated with high honors with the class of 1909, next May. Not only has she succeeded in paying all her college expenses by rearing the queen-bees, but she has a snug nest-egg for a start in life when she receives her degree.

Miss McIntyre's father is a prominent bee-keeper.

Four years ago she conceived the idea of rearing bees to pay her expenses through the university. She started work and soon had a large bee-farm which became more and more profitable.

When she had realized $200 from the sale of bees she came to this city and registered as a freshman in the college of social sciences.

* * *

For Whooping Cough.

Boil down a handful of fresh crushed (or dried) haws with a pint of water, and sweeten with honey. Continue to take of this tea frequently throughout the day, and the suffering will be palliated and the cure hastened.—Prak. Wegweiser.

* * *

A Sister's Interesting Questions.

Dear Miss Wilson:—I have only 3 colonies of bees—my first year. They have been dragging out bees and killing them until it got too cold to do so. Are they the drones, or weak young bees?

2. How long does it take to fill a super of 24 sections, if it is a good year?

3. Should I remove the super as soon as filled?

4. Do you approve of the fences between sections in supers?

5. Do bees need water at any time? If so, how do they get along in winter?

6. Will 1909 be a good year for honey, or was the white clover killed by dry weather?

7. Is that the best for honey? Isn't fruit-bloom as good?

8. Do the bees need any ventilation in hot weather if there are 2 holes at the top of the brood-chamber, also an opening at the bottom?

Bloomington, Ill. Mrs. E. P. Day.

1. They are probably the old dead bees that they are carrying out. A good many of the old bees die during the winter.

2. It depends a good deal upon the management. If kept very crowded it might be filled in a week, and if plenty of super-room is given it may take two weeks, or longer. We prefer to give them plenty of room, and more time.

3. The super should be taken off as soon as finished, or even before quite done, if best results are obtained as to whiteness of comb, and the unfinished sections returned to be finished.

4. Some prefer fences, but we prefer the plain wood separator. But fences are a sort of necessity with plain sections.

5. Yes, bees use a great deal of water, and it is a pretty good plan to provide them a watering place in spring and during the summer. In the spring if warm water is given it will save a good many bees that would otherwise be lost by being chilled by cold winds while searching for water. In winter they are not rearing brood, but remain in a partly dormant condition, so get along with little or no water. The vapor from the hive walls and bees condenses on the hive walls and furnishes some water, and there is also some water in the honey.

6. Can't tell. Let us hope it will be a good year. Likely the dry weather has left enough white clover bloom, but even with abundant bloom white clover doesn't always yield nectar.

7. Very likely white clover is the most important honey-plant in your locality. In some places basswood or something else may be of more importance. If you had only fruit-bloom to depend upon, you might never have a crop of honey; but it is of great value in building up colonies.

8. Yes, if the holes are large enough. Bees need lots of ventilation.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Texas 1909 Prospects.

The weather has been very changeable for the last few weeks; and although unusually warm for this early in the season, we have had several cold spells every few weeks apart. These lasted only a few days, generally, and then "good old summer time" would reign again.

From a bee-keeper's standpoint the season opened up too warm and early—too far in advance of the bees. Everything was beginning to appear spring-like, and the buds were swelling to the bursting point when the cold snaps came and checked them.

Mr. W. H. Laws writes this from Bee County:

> "The weather of a few weeks ago I believe was a benefit to the bee-forage in this locality, as it was cold enough to nip all the tender growth that the previous mild weather had forced out. And if the cold had not come when it did, we would undoubtedly have been the loser, for the brush was too far advanced for the season. Now it will be April, as it should be, before the 'waheah' and 'catclaw' will be anything like ready for the bees. And we want April weather and balmy days when the bees and forage are both right."

The same holds good for the most parts of the South. Although the bees are much more advanced with their brood-rearing, and unusually strong for this time of the year, and could perhaps take care of an early season, the weather conditions so early in the year are seldom favorable. It is better then to have both the bees and the forage in the best condition when the April weather is at its best. And with just such conditions wouldn't the honey flow?

◆

Apiary of Grant Anderson

This apiary is stocked with the best Carniolan bees. The foundation stock was sent me from the Government Apiaries at Washington. The camera caught but a small portion of the apiary.

While this is a queen-rearing apiary, it also contains over 100 strong colonies run for honey. My bee-keeping experience dates back over 30 years, but I was not in a good location, and did not try to keep more that 50 colonies until 1908. I am a blacksmith and carriage-builder by trade, but was obliged to give up my trade on account of my health failing in 1903, when I moved to Uvalde County, with 80 colonies of bees. Like many others I have ups and downs with the bees, but I have never known a total failure in the honey crop. In 1905 I offered queens for sale and was fairly successful, and my trade in queens has increased each year.

I have 6 apiaries located around Sabinal, and keep 4 races of bees—Italians, Carniolans, Banats, and Goldens. My favorites are Banats and Carniolans.

My honey seldom goes out of Texas, but my queens go to all States in the Union, except Maine, and quite a good many to England and the West Indies, Canada, and Mexico.

While the honey crop in this county never fails entirely, I don't know of any one who has made a fortune out of bees. In this locality the honey crop this year is about an average. My best colony, an early swarm, gave me 185 pounds of white comb honey.

Grant Anderson.

Sabinal, Tex., Oct. 31.

A Carniolan Apiary Belonging to Grant Anderson, of Sabinal, Tex.

◆

"Shaking" the Bees to Work.

Regarding the above, Mr. Byer, page 44, seems to doubt whether there is much in it or not. He is quite right to a certain extent, when he says that the "shaking" so much advocated a few years ago is not so popular now; still, I know that it is used to a more or less extent by a great number of bee-keepers. It is true, however, that there is not such a howl made about it now as was made then. But is this not true with all new (?) things? As they get to be older—and even those that are adopted and used extensively—they are soon little talked about, or "are not nearly so popular any more." Yet they are quietly used by thousands of bee-keepers the land over.

It is the same with "shaking" bees to accomplish one thing or another. I used it long before the noise several years ago, and have continued to use it with a great deal of satisfaction.

It would be well to mention, however, that I have not made it a rule to use it in a wholesale way for any reason. But there are so many uses to which the shaking of a colony of bees can be applied that there is enough in it to be worth a good deal.

It might also be well to mention here that while I am an advocate of "shaking energy into bees" and getting better results, and more work out of them, I do not advocate going too far with the matter. In this respect I am not quite in accord with the Williams idea of "shake, shake, and shake again," every little while, to make the bees go to work. In the first place it seems too cruel a thing for me to do, and then it would consume too much time with a great number of apiaries.

Keeping a colony stirred up at certain times of the year, which can be done during certain hive-manipulations, will bring good results, however. And the "shaking method" can be used successfully in swarm-control, for introducing queens, nuclei-making, moving bees short distances, and in numerous other things as well.

Legislation for Bee-Keepers.

That is news to me—page 45—relative to an amendment to the California foul-brood law. Texas is just contemplating the same kind of a change, apparently, viz.: to provide for an annual appropriation of $2500 to carry on the work, which will be put in the hands of the State Entomologist of the Experiment Stations, in whose power the State foul-brood law has been placed. An extra person is to be appointed as Chief Inspector of Apiaries to look after the work in all parts of the State, with full authority and supervision, under the direction of the State Entomologist.

Since the State is such a large one, and it is impossible for one man to cover the entire territory, deputy district inspectors may be appointed where needed. This will be very much like that of California, and while Mr. Pryal does not favor it, I have been inclined to believe that we can make it work very satisfactorily here.

Bees Allowed to Build Comb.

There are conditions when bees secrete perhaps more wax than under ordinary conditions, and during such times it might be wise to make use of this in allowing the bees to build a certain amount of combs. Too much should not be depended upon this, however, for I am sure that, after several experiences, I have lost quite a good deal by supposing that bees would waste much wax if not given a place to use it. Consequently my views differ somewhat from the position taken by Mr. Aikin, as quoted on page 37.

An experience that opened my eyes last year showed very conclusively that it was a mistake to suppose that it was a waste to give comb foundation in full sheets to colonies that were working "full blast" in the midst of a splendid honey-flow. Conditions were most favorable in May for wax-secretion and comb-building. Supers were being given every 8 or 9 days until every colony had from 6 to 7 30-pound shallow-frame comb-honey supers on. The average yield was 180 pounds per colony.

For years it was my rule to use full sheets of comb foundation in the first one or two supers given, or until the bees were secreting wax so freely that it was considered a waste to do so. So the third and following supers received only 1-3 or 1-2 sheets.

Having considerable beeswax last spring I had it converted into super foundation, and used it more freely, so that full sheets were being given in all, even the third and following supers. It happened that on account of a delay in shipment of a part of our foundation, we ran short, and therefore were compelled to fill a goodly number with only 1-3 and 1½ sheets. The results were a great surprise to us. Instead of the bees using the "great quantities of wax they were supposed to be secreting," all the colonies given supers with less than full sheets of foundation fell behind fully 10 pounds of comb honey to the super. We had saved an average of 10 cents in foundation per super, but lost $1.20 of honey for it. This proof was so convincing that I shall use full sheets throughout now, supers and all. I have always advocated nothing less than full sheets for brood-frames. During a poor season the difference would have been greater.

It may be well to mention here that I have seen the bees use poor white wax to stop cracks with, and daub it in other places even when they had comb to build, so that this can not have great weight. As a producer of both comb and extracted honey, I have had other similar experiences.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

How the Bees Are Wintering.

At this date (Feb. 19) naturally we are beginning to speculate as to how the bees are going to winter. All my bees with the exception of the 35 colonies mentioned in another item, are out of doors and heavy with buckwheat honey. They have not had even a partial flight since November, and from present indications I would judge that there will be some loss from dysentery, as a few colonies show unmistakable signs of the complaint already.

Last fall, as I had detected no honey-dew present in the hives, I decided to risk the buckwheat honey for stores, but if there is any trouble this year, it will be the last time I will take any chances on wintering without a goodly portion of the stores being sugar syrup or clover honey. The bees that are in the cellar are on sugar stores for the most part, by reason of the smaller hives they are in, necessitating more feeding in the fall. If the bees that are on the buckwheat stores could have had a flight in January, it would have had a good influence on them, no doubt, but that flight was conspicuous in its absence.

How much difference a few miles one way or another in a locality may make, was forcibly brought to my notice a short time ago, when on Jan. 24 all the bees from Toronto and west had a glorious flight, while at my place, about 15 miles east of that city, everything was shrouded in a dense fog on that date. Sometimes one good flight makes the difference between good wintering and bad wintering, and there is a possibility that this may be the case this year.

This winter as a whole, would be classed as milder than usual, but, on the other hand, we have had practically no snow, and the bees have been fully exposed to what cold weather we have had. With the hives well protected with snow, severe weather is not felt by the bees nearly as much as is the case when the hives are open to the wind all the time, even if the temperature does not go extremely low.

Clover looked good in the fall, and I do not think there has been weather to injure it yet, but of course the spring is the critical period for this plant.

Since writing the foregoing, the bees have had today (Feb. 22) a partial flight, and with the exception of two or three colonies that show signs of dysentery, all appear to be wintering well, so perhaps the flight they missed in January did no harm after all. Here in this locality it is quite common for the bees to go 4 months, and often 5 without a cleansing flight, yet if the stores are good we find no trouble to winter them successfully.

In this connection I often wonder what the reason is therefor, when I see, in the bee-papers reports stating bad results when perchance the bees had to go 7 or 8 weeks without a flight.

Cellar-Wintering of Bees.

While at the Brant District Bee-Keepers' convention, held in Brantford during the last week in January, R. F. Holtermann kindly took the writer out to the mammoth bee-cellar of Holtermann & Foster, some 2 miles outside of the city. This cellar, probably one of the largest on the continent devoted exclusively to the wintering of bees, has combined in its architecture all that is known of the scientific and practical, in so far as the indoor method of wintering of bees is concerned. The cellar has been described in the bee-papers, and is also fully illustrated in the "A B C and X Y Z of Bee-Culture," so it would be waste of time to enter into details at this time.

At the time of our visit, there were over 500 colonies in the cellar, and all were so quiet that only a faint hum was perceptible, notwithstanding the fact of the two of us looking at nearly every colony with a lighted candle. While the cellar is constructed with a view to using artificial heat if required, yet this winter, so far, a fire has not been started. In lieu of this, Mr. Holtermann had the inside of the walls packed well with quite a thickness of straw, and up to the time of my visit he had not thought it necessary to use the stove, and, if I am correct, he was under the impression that better results were being obtained than was the case when they formerly had to use the sove. Certainly the bees were in the very best of condition on Jan. 29.

Unlike most cellars, the floor above, or ceiling, has no sawdust or other like material, but is, if I remember correctly, constructed something on this order: A tongue-and-groove flooring, felt paper, air-space, and then another tongue-and-groove flooring. Bees in a cellar to the number of 500 or more colonies, must generate a lot of heat, as on the day of our visit the wind was blowing a perfect blizzard from the east, and it was very cold. Yet notwithstanding the fact that a large ventilator was open in the floor or ceiling, and the outside cellar doors at the east side partly open, the thermometer was at 43 degrees.

While in the cellar, Mr. Holtermann had a good joke at the writer's expense, and I may as well tell of the matter now and be done with it. While groping around in the semi-darkness, looking in the entrances of the hives, suddenly we came to a couple of strange looking objects that in the deep gloom reminded me of incubators. Naturally I figured it out in a hurry that Mr. H. was like other well-known bee-men, going into the chicken business. Imagine my feelings when in answer to my inquiry, he said, "Why, those are Aspinwall hives!" Now I am perfectly familiar with these hives, in so far as that can be possible without using them, and I want it understood, no matter what may be said to the contrary, that it was the *darkness* that deceived me.

Joking aside, the Aspinwall hive, as now constructed, is, in its style of architecture, so different from all the old familiar patterns, that it is not to be wondered at if people should be deceived as to what they are for, even if seen in *daylight*.

Returning to the cellar, I believe it has always given good results, with the exception of one winter when a number of colonies were badly affected with dysentry, owing to the presence of some honey-dew in the hives. This reminds me to remark, that no matter how important the nature of the repository for wintering may be, the quality of the stores is still *more* important. Just a few days ago a well-known Ontario bee-keeper wrote me that his bees were very restless in the cellar, and were spotting the hives badly, although it was as early in the winter as Feb. 5. This cellar is very dry and of equable temperature and has given good results during the past winters, so there seems to be no question but what the quality of the stores must be to blame for the present ill conditions.

When the letter came telling me about the restless bees, I 'phoned to the farmer in whose cellar I have 35 colonies, and he said that he had just been down cellar, and found the bees very quiet. Now this cellar is damp, in fact is situated in a springy locality, the floor being wet nearly any time of the year, but the stores in the hives are good, and that fact explains why the bees are not restless in a cellar that certainly cannot be called well adapted to the wintering of bees. The bees wintered excellent in this cellar last winter, and from present conditions we are hoping for like results again this season. As a partial offset to the dampness mentioned as being ever-present, I might say that the bees are only separated from the furnace by a partition of inch boards. Whether this furnace is a benefit or not, I am not able to say, as the bees were not wintered there before the furnace was installed.

Too Early Brood-Rearing Not Desirable.

In a late issue of Gleanings, Editor Root tells of a colony of bees that they have in their office, where the temperature averages 68 degrees, the bees of course having an entrance by way of the sill of the window to the outside. He reports that the bees are doing well, and brood-rearing going on as in the mouth of May, and from this fact he grows enthusiastic and says that they are considering the idea of putting up a house-apiary, the same to be heated by steam all winter, to a temperature of 70 degrees. He says, "One could have tremendously strong colonies in the early spring. While brood-rearing would necessarily consume stores, yet the trade of syrup or honey for young bees would be a good one."

The plan at first glance may look a trifle alluring, yet with all due regard for Mr. Root's arguments on the question, I venture to say that the advantages to be gained are more visionary than real. It is a well-established fact that brood-rearing wears out bees as fast as, or faster than, honey-gathering, and to my mind this early breeding would be simply sacrificing not just one bee for another, but more like two old ones for each young one reared. With a lot of brood in the hives, bees will fly out in weather unsuitable even under ordinary conditions in the late spring, and it is but natural to assume that this condition of affairs would be much more aggravated if the brood-rearing were forced forward under normal surroundings. Personally, I would be inclined to think that no returns would be received for the stores consumed by the early breeding, and, on the contrary, that the powers of the queen, bees, etc., would be drawn on to a positive disadvantage to the colony.

Granted, for the sake of argument, that the *forcing* system *would* bring the bees through the winter "tremendously" strong in the early spring, it is just a question if that condition would be desirable in localities where the main flow comes two or three months after that date. A colony wintering well, under normal conditions, will be in the very best condition by the time clover opens, and that, in my opinion, is the goal we should be aiming at. While I *always* like to have colonies *strong*, yet some of my best results have come from colonies that were *just right* when the flow opened, and this experience has no doubt been duplicated by scores of bee-keepers.

Honey vs. Sugar.

The latest statistics, make it clear that Canada and the United States consume, on the average, about 80 pounds per capita of sugar. Why should not a goodly percentage of this sweetness be honey instead of sugar? Certainly there is no good reason why this should not be the case, yet if we were to suggest such a condition, lots of people, including some bee-keepers, would laugh at the idea. The writer has six brothers and sisters, and while we were all home on the farm, with our parents and hired help, the family averaged twelve. For a number of years we never used less than 600 pounds of honey per annum. This was extracted honey, and I suppose, on the average, there would be another hundred pounds of comb honey as well. In telling this to some folks, I have heard them remark that this was altogether out of the ordinary, and some few would even hint that this was really too much of a good thing.

Now I have reason to believe that the continual presence of real good honey on the table, (we never kept any other kind for our own use) lessened the consumption of sugar, and from the general good health of the family, it is certain that the honey did no harm, leaving out the possibility that it may have even been a benefit. Yes, I believe that it would be to the good interests of the consuming public, as well as to the producing bee-keepers, if half of the 80 pounds of sugar could be substituted by honey instead. Indeed "substituted" is hardly the right word, as it is generally supposed to mean, "replacing with something *just as good*," but in this case we believe the honey instead of sugar would be something "quite a bit better."

Breeding from the Best.

The importance of breeding from our very best colonies is great, and is becoming better understood as the years go by; and the bee-keepers of America stand in the foremost ranks of the world on this particular question."—G. M. DOOLITTLE, in Gleanings.

The first part of that statement can hardly be too much emphasized, but when Mr. Doolittle placed the bee-keepers of America at the head he must have forgotten little Switzerland.

Convention Proceedings

Report of the New Jersey Convention.

The annual meeting of the New Jersey Bee-Keepers' Association was held in the State House, Trenton, Jan. 9, 1909. Promptly at 10 a. m., President Wm. W. Case called the meeting to order, and gave the opening address. He expressed himself as pleased with the increased attendance. His address was mainly on the prevalence of foul brood in New Jersey, of his method of treating it, and of the need of a foul brood law for New Jersey. The disease is known to be scattered more or less throughout the State, and seems to be rather on the increase in the southern counties of the State. Mr. Case's method of treatment, in brief, is as follows:

FOUL BROOD TREATMENT.

Build up the colony as fast as possible in the spring—feed if necessary. Do not give surplus room. Allow them to swarm naturally, or, better yet, shake when strong enough at the beginning or during the flow. Hive or put the forced swarm on the old stand, and move the parent colony to a distant part of the yard. Use full sheets of comb foundation, or starters, as is your custom. In 3 weeks treat the parent colony moved to the distant stand, the same way. Apply treatment late in the day, to avoid scattering the bees. There is one rule that must be strictly observed, and that is, that the newly hived swarm must be left *strictly alone* at least 5 days, or better still, a week. After 5 days or a week, it may be treated in all respects as a colony free from disease, surplus room given, and so on.

This method of *one* shaking is based on the theory that all diseased honey in the honey-stomachs of the bees is digested and converted into wax in a week's time; but that if the hive is opened or molested in any way before the expiration of a week, the bees will even up the honey among themselves, and will then store some of the diseased honey. This method has proved successful if faithfully and carefully carried out.

There was a sample comb of American foul brood on exhibition, and was observed by all. Many questions were asked by those not familiar with the disease, which were fully explained.

PRODUCING EXTRACTED HONEY.

The first paper was by Mr. E. G. Carr: "How I Secured 3000 Pounds of Honey from 27 Colonies, and Increased to 39."

He used the 10-frame Langstroth Hive, Hoffman frame, chiefly. He clips all queens during fruit-bloom. He sees that all colonies have plenty of stores, and supplies any that need stores, by giving combs of honey saved over from previous season. Later in the spring he puts an empty super of drawn combs over each colony, using the queen-excluder over the brood-chamber that the queen may not be crowded if an early flow comes, as he sometimes has. At the beginning of the clover flow all colonies are given room, and plenty of room is given through the flow as needed.

He has some swarms in his locality, and these he treats as follows: He hives on the old stand on full sheets of foundation, giving a frame with least brood in them, and puts the other 8 frames of brood in another body on a top of the hive with a bottom-board between. In 5 to 7 days he puts the top brood and queen all together in its old place at the bottom. This usually breaks up all swarming and keeps brood, bees, and queen all together, which keeps all colonies strong.

He allows all honey to be ripened thoroughly and sealed over before extracting.

The paper was followed by interesting questions and discussions. There was considerable discussion as to whether light honey stored in brood-combs was darkened. Mr. Carr maintained that it was, but the majority did not agree with him.

REQUEENING COLONIES.

The subject of requeening received considerable discussion.

Mr. Harold Horner, who has extensive apiaries in the State, practises requeening every year at the close of the clover flow. He was very certain that it paid, though entailing considerable work. Other members practised requeening every 2 years.

THE GOVERNMENT AND BEE-KEEPING.

The first paper in the afternoon was by Franklin Fox, of Pennsylvania, on "What the United States Government Is Doing for the Bee-Keeper." Mr. Fox was assistant in the United States Apiary during the season of 1907, so his knowledge comes first-hand. He briefly reviewed the establishment of the Division of Apiculture, and of the appointment and work of Frank Benton. He referred to Mr. Benton's interest in the giant bees of India (Apis dorsata and zonata), and of Mr. Benton's trip around the world to endeavor to secure these bees; and upon his return of the appointment of Dr. E. F. Phillips as head of the Division. He told how the Division is testing new races of bees and their crosses. But the most important work of all is the investigation of bee-diseases from various parts of the United States. The Division has secured a competent bacteriologist, Dr. G. F. White. Dr. White has discovered the particular bacillus of both European and American foul brood. He has found that bacillus alvei is the specific germ causing European foul brood, and a germ to which he gives the name of "Bacillus Larvæ," as the specific cause of American foul brood. As most of those who have followed these investigations know, this is different from the conclusions of certain European investigators. The Division is also investigating the cause of pickle brood, bee-paralysis, and other bee-diseases, but has not completed the investigation, so has no definite facts as yet.

Mr. Fox was asked a number of questions about the different races of bees, especially the Caucasians. He said the Caucasians in the Government Apiary were extremely gentle, fully the equal of Italians as honey-gatherers, and much more prolific, and better breeders during a dearth of honey. He said the Cyprians had been abandoned on account of their ill temper and ferocious stinging propensity.

Next the business session was held. The minutes of the last meeting were read and approved. Pres. Wm. W. Case was unanimously re-elected president. J. H. M. Cook, A. G. Hann, and E. G. Carr were elected vice-presidents. Albert G. Hann was elected secretary and treasurer.

"UP-TO-DATE BEE-KEEPING."

The next paper was "Up-to-Date Bee-Keeping," by J. H. M. Cook. Mr. Cook said that the up-to-date bee-keeper studies the best books on bee-keeping, reads all the bee-periodicals, attends the conventions of bee-keepers, visits his brother bee-keepers, is thoroughly enthused with his calling, thinks about it all day, and even dreams about bees at night. He studies his locality, his flora, and times of honey-yields, and manages his bees accordingly. He uses latest improved hives and fixtures, and adopts short cuts in manipulations. Lastly and most important of all, he puts his crop up in the most attractive shape for market, and studies the market situation carefully before disposing of his crop.

MISCELLANEOUS MATTERS.

Before adjournment was taken, the matter of holding a field meeting was discussed. It was moved and carried that a field meeting be held in June next, the time and place to be arranged by the Executive Committee. It will probably be held in connection with the Philadelphia Association in Burlington County.

It was also suggested that a 2 days' annual meeting be held next year, which suggestion will probably be carried out.

There was an exhibition of samples of comb and extracted honey from different parts of the State, also samples of beeswax, and a few bee-appliances.

There were over 50 bee-keepers present, and several new members joined. It was one of the most interesting, most profitable and best attended meetings that the Association has ever held. One enthusiastic member who has attended some National conventions, said: "It was the most profitable meeting I have ever attended anywhere."

But next year we expect to achieve just twice as much.

Albert G. Hann, *Sec.*
Pittstown, N. J.

Report of the Northeast Wisconsin Convention.

The Northeast Wisconsin Bee-Keepers' Association held its fifth annual meeting on October 8, 1908, at Mishicott, Wis. It has not as large a membership as many other bee-keepers' associations, so the attendance was rather small, but those attending are quite a live set of bee-keepers. The meeting was called to order by the president, John Cochems, at 10 a. m. The report of Secretary C. H. Voigt was then read and approved. Then the treasurer's report followed, and was also approved. There were no papers read, the main feature being the question-box.

AFTERNOON SESSION

President Cochems called the meeting to order, and the question-box was continued. The first question was, "What is the best way to get only one swarm from a colony, if you allow natural swarming?"

The ideas ran quite apart, and could not be satisfactorily settled. A motion was then made and carried that the members present experiment on that line next season and report at the next annual meeting.

"Is the Baldridge plan a good one for curing foul brood, or are others better?"

There was no one present that knew, but all were thankful that so far they did not have to make the accquaintance of foul brood.

"Is honey taken from a colony affected with foul brood all right for table use?"

The answer was, "Don't know." But it was thought by some that it ought to be all right when produced in a super with a queen-excluding zinc between.

How to prevent swarming during a honey-flow, was an interesting topic. The first answer was to have no honey, and the bees would prevent it themselves. The next answer was, When you are working for extracted honey with 2-story hives, examine the brood-nest when putting supers on, and find the queen-cells. Cut them out and shake off the bees, put the brood in the upper story, and give empty comb below. The next was to shake the bees off the brood, cut the queen-cells if any, give the brood to weak colonies, and put empty combs in the brood-nest. It was then agreed that these methods were not always sure preventives.

Then followed election of officers: President, John Cochems, Mishicott, Wis.; Vice-President, Mark Schnieder; Second Vice-President, Fred Trapp; Secretary, Charles W. Voigt, Tisch Mills, Wis.; and Treasurer, John G. Mueller.

The question-box was continued as follows:

"How can you tell so late in the season as October 8, without opening the hive, by outside appearance, that a colony is queenless?"

This brought out a lively discussion. Mr. Trapp thought it was a sure proof that, if a colony had drones as late as October, it had no queen. Mr. Voigt showed that drones were not always a sure sign of queenlessness. He said that only 2 days prior to the convention he examined a colony with drones, and found they had a queen. It was considered best, by the majority of the members, to open the hive and examine the colony, as they may have a queen which is worthless.

"How should we feed in the fall when it gets cold and bees need feeding?"

Feed early, before it is too cold. As long as bees can fly every day, it is all right to feed. If neglected till cold weather, feed on warm days, good thick syrup; or, still better, give sealed combs of good honey.

A motion was made and carried that the secretary should send a report of the convention to the American Bee Journal.

On motion the convention adjourned till October, 1909, to meet at the call of the committee.

C. H. Voigt, *Sec.*

Contributed Articles

Building Bees Up for the Harvest

BY RALPH BENTON.

Asst. Entomologist, University of California.

The passing of winter and the dawning of spring marks the most critical point in all apiary operations, a point when the skill of the bee-keeper is taxed to its fullest extent. If it is a critical time for the operator it is so because it is a critical time for the bees themselves. At this time of the year the old bees are dying off very rapidly; yet at the same time the warmth of the greatest number of bees obtainable in the colony is essential for brood-rearing operations to replace this rapid death-rate. The position of the colony is further made precarious at the opening of this period by the absence in any great number of young or nurse bees to care properly for the brood under way, thus necessarily limiting the extent to which, and economy with which, brood may be reared. Manifestly the situation of a colony in the early spring of the year is greatly modified by the condition in which the given colony went into winter quarters.

It is not my purpose here to go into the matter of wintering bees, for that is a subject in itself, but there are a few principles that may be here cited for the sake of their bearing upon spring management. To insure a good supply of strong, vigorous, young bees, breeding operations should be kept up as late in the fall as practical, and every colony should go into winter quarters with a good cluster of bees headed by a young and vigorous queen. This insures early spring brood-rearing operations carried on by a sufficient number of comparatively young bees, enabling the colony to make relatively rapid strides in regaining a working strength.

Abundance of Stores—Pollen.

In the matter of stores it has been my experience, other things being equal, that the colony having an abundance of stores comes through the winter in better condition. This may be due to several reasons. Chief among these, aside from actually affording the bees an abundance of food, is no doubt the fact that combs filled with honey retain the heat of the cluster much more effectively than do empty or only partially filled combs. The result is that a more constant temperature is retained in the colony and the cluster not exposed to sudden changes of temperature with the consequent wear and tear of the bees. The elimination of this energy-consuming wear and tear as a result of constant and sudden changes of temperature decreases the amount of stores consumed by the colony so that in reality a colony wintered on an abundance of stores actually consumes less than the colony wintered on scant stores. The distribution of the stores should be through or contiguous to the cluster, and each comb should be readily accessible from the adjoining one, either through the comb itself by passage-ways, or over the top-bars, thus insuring against the possibility of stores at any time becoming inaccessible.

I deem it essential to early brood-rearing operations that a good supply of pollen be present in the hive; this is especially essential when colonies are wintered on artificial stores, as sugar syrup, since such stores do not contain the pollen present in normal honey. With a good cluster sufficient to generate heat, and plenty of stores, the wintering of bees resolves itself into keeping the colony dry, for if bees under the above conditions are kept free from dampness they will stand almost any amount of cold within reasonable limits. The value of packing about a colony to retain the heat generated is conditioned upon two things: the closeness of the packing to the bees, and the moisture-absorbing power of the packing. Unfortunately, in most winter hives the packing is separated from the bees by an inner wooden wall sometimes an inch thick, which is almost the same as having no packing at all. I have secured the best results with surrounding packing when such packing is only separated from the bees by at most a heavy grade of duck canvas, or similar material, permitting of the free passage outward of moisture, and at the same time retaining the heat of the cluster. Since the heated and moisture-laden air of the colony to a great degree rises, the value of absorbent packing above the frames is readily to be seen, and there should always be provision made above the packing for a free circulation of air to carry off the moisture passing off through the packing.

If these points are observed, colonies left undisturbed in well painted and tight hives, placed in surroundings with reasonably good drainage, will winter in good shape. Even in our mild California climate I have frequently raised the covers of colonies wintered without winter protection, to find the cover soaked with moisture, and sometimes pools of water of condensation standing on the top-bars of the frames and drizzling down upon the stores and cluster. For this reason I recommend, even under California conditions, that if the best results are to be obtained in our damp winter climate, at least some top packing should be given the bees, with free ventilation *above* for the escape of moisture.

Early Spring Overhauling.

An early spring overhauling will be found especially advantageous in the determination of the exact condition of each colony. This should be done as soon as the winter is broken and continued warm weather is assured. The disturbing of bees during cold weather is at all times to be discouraged. This applies equally well to jarring as well as to actual manipulation. It is self-evident that if the cluster is broken through opening a colony in the cold the inability of the bees to cluster again leads to their chilling, resulting disastrously. In the case of jarring, the bees become excited, move about, and generate an excess of heat; this heat, together with an excess of moisture given off from the cluster, causes condensation when it strikes the walls of the hive, and dampness results.

In California the first overhauling usually takes place the last of January or the fore part of February. In the course of this inspection the work of each queen should be noted, and specially strong colonies selected for early queen-rearing operations. Frequently the weaker colonies may be strengthened with judicious addition of emerging brood from stronger ones; also an equalization of stores may be profitably carried on. At this time, and more especially a little later, there are certain manipulations to enlarge the brood-nest which may be carried on—the real, positive steps toward the building up of the bees for the harvest.

I have alluded to this period as a critical time for colonies of bees, and it is in the operations carried on at this time that the skill and judgment of the bee-keeper are brought into play. For a long time many colonies at this season do not seem to gain appreciably in numbers although they are regularly rearing brood. This is due to the fact that the brood-rearing is limited to the strength of the colony, and in amount is but a little beyond the rapid death-rate of the old bees of the colony. If left to itself the average colony will slowly gain in strength, and then suddenly taking a new lease on life, as it were, surmount its critical stage and rapidly increase almost in a geometrical ratio. But for the average spring honey-flow coming in May or June, and in California sometimes earlier, this rapidly breeding stage is not reached early enough to populate the colony to its full capacity by the time the harvest is on; for the bees that go into this early harvest must come from eggs deposited at least 5 weeks prior to the harvest, and to insure a goodly number of them 6 or 7 weeks prior to the harvest. Manifestly to have a colony breeding freely 7 weeks prior to the spring harvest, posits that the critical period in the history of that colony's brood-rearing operations must have been past 1 to 12 weeks prior to the harvest in question. In other words, some 3 months before the spring honey-flow, steps should be taken speedily to enhance brood-rearing, and give every queen the opportunity to operate to her fullest egg-laying capacity.

Increasing the Brood Areas.

The first steps to be taken looking toward increasing the brood-areas of a colony at this season of the year, is the bringing about of the most favored conditions under which naturally the bees would produce the most brood. Nearly all varieties of bees are governed somewhat in their rearing of brood by the presence or absence of a honey-flow. This is least true, perhaps, of the Carniolans, which may be said to be continuous breeders. On the other hand, it is pre-eminently true of blacks or Germans, and to a large degree also of Italians, that the absence or least slackening of the honey-flow is accompanied by a relative cessation of brood-rearing activities.

Then, the first step to increase the amount of brood in a colony, it is seen, is to supply the bees with a regular source of food-supply in the absence of such a one naturally, This, then, is the principle upon which the practice of stimulative feeding rests, a practice involving some labor and outlay, but one which always pays, even when the colonies so fed have an abundance of stored food. It is the idea of a regular source of incoming food-supply which acts as a stimulant to the otherwise lethargic and tardy colony. The food fed for spring stimulation need not be a heavy syrup—about equal parts of sugar and water by weight, thoroughly mixed, and fed warm, will be found to be sufficient. Some honey may be added if on hand, but it is not necessary provided the bees have access to pollen, and only endangers the starting of robbing through its strong odor.

There are many ways of feeding. In general I believe, for stimulative purposes, some form of top feeding above the cluster to be best, as by means of an inverted jelly glass, with the top punctured, or on a large scale some similar but more rapidly handled form of feeder. Small quantities of food given frequently will be found to bring about the desired results.

The next natural condition favoring the production of brood to be appreciated is the tendency of a colony of bees to organize and expand its brood-nest into a sphere or oval dimension. It must be borne in mind that a queen not only beginning near the center of a little forward of the center of a comb, deposits her eggs in ever-enlarging circles or ovals, but in like manner organizes her brood laterally as well, causing the brood-nest to assume the form of a sphere or ovoid. This is especially to be noticed early in the season when the cluster is small. At this season it will be noted that the queen has small patches of brood in several frames, preferring thus to confine her operations within the cluster of the bees comprising the colony at the time. As the cluster enlarges she increases her brood-areas normally in all directions, adding slightly to the area in each comb occupied, and to preserve the spherical or oval form will extend her operations slowly to the combs next adjoining the combs already occupied. It is just here that the bee-keeper can step in, and with the normal enlargement of the cluster hasten the relative enlargement of the brood-areas beyond that point to which the queen would ordinarily, of her own accord, extend her brood. This is done by a judicious spreading of the combs containing brood, and the insertion of good, well-drawn brood-combs containing little or no honey or pollen. An empty comb thus placed in the middle of the brood-nest will be rapidly filled with eggs, and through such manipulations the brood-nest can be enlarged more rapidly than it would be if left undisturbed to take its course.

Some judgment is required in thus enlarging the brood-nest, care being taken not to spread the brood too much, more than the size of the cluster will warrant, taking into consideration the possibilities of cold snaps and attendant contraction of the cluster. Care should be taken in the selection of the proper combs for insertion in the brood-nest. No combs containing sealed honey or pollen in appreciable quantity should be thus used since such combs are liable to act as a division-board and divide the brood-nest, not infrequently resulting in the abandonment by the bees of one or the other halves of the nest, resulting in the loss of brood through chilling on account of a forced contraction of the nest. To obviate such dangers, and yet permit of a more rapid increase of brood through facilitating the oviposition of the queen, in the case of weaker colonies, emerging frames of brood from the stronger colonies may be inserted. The young bees thus added to the strength of the colony will enable the cluster to care for more brood. The combs so supplied the colony, will be, as fast as the young bees emerge, taken possession of by the queen and the brood-areas so proportionately increased. From time to time as the cluster grows, more emerging brood may be added until the critical stage of the colony is passed and the queen enabled to deposit to her full capacity. Into the stronger colonies from which emerging brood is drawn off, empty brood-combs should be inserted, giving the queen free room to deposit more eggs.

Sorting Out the Brood-Combs.

In all of these manipulations there is abundant opportunity to better the combs for the brood-chamber of each colony, gradually discarding the poorer, irregular or drone combs. Such combs should be kept going toward the outside of the hive, and finally removed as more good worker-combs are added in the center of the brood-nest. This same policy may be profitably pursued at this season of the year toward combs filled with honey or excessively clogged with pollen, such combs being either removed or relegated to the top stories. Such combs clogged with honey may sometimes be profitably freed from honey by simply uncapping them, when the bees will remove the honey for more immediate use. If such honey is granulated at all it will be found to be much more easily used by the bees if they have access to water, which, fortunately, is usually true in the spring of the year. Combs of honey thus treated act as a stimulant to the bees, but care should be taken at all times to guard against robbing, which is very easily incited in the absence of a honey-flow.

In all manipulations with bees early in the year one must have an eye constantly to the attitude of the bees toward their queen; for sometimes the bees suddenly maliciously pitch upon their queen, and, forming a ball, kill her. Should any such inclination on the part of the bees be noted, the hive should be immediately closed. Should this inclination not be noticed until the bees are actually balling the queen, and if after thorough smoking the bees still persist in troubling her, the safer plan is to cage the queen for a day or two, quietly releasing her toward night.

Essential Principles in Spring Management.

By way of emphasis I will recapitulate, then, briefly the essential principles I deem of prime importance in the successful building up of colonies for the harvest: Successful wintering depends upon—plenty of young bees reared late, forming a cluster sufficient in size to generate heat enough to live, and to rear brood in the spring at a fairly rapid rate; a good young and vigorous queen; an abundance of good, well-ripened honey of easy access to the cluster; surrounding packing to retain the heat generated, placed close to the cluster, insuring the free absorption of moisture; free ventilation above the packing, to carry off the moisture absorbed; and finally, but none the least, quiet and undisturbed surroundings.

Spring manipulations to enlarge the brood-nest should be taken as soon as the winter is broken, preferably some 10 to 12 weeks prior to the main honey-flow. Such manipulations consist in—the strengthening up of the weaker colonies with emerging brood; an equalization of stores; and a judicious spreading of the brood within the colony, followed by the insertion into the brood-nest, from time to time, of good, well-drawn and preferably warmed, but empty, worker brood-combs. These manipulations are profitably accompanied by regular stimulative feeding in small quantities of thin syrup, to be continued until such a time as the bees begin to gather regularly from an early natural source of honey.

Berkeley, Cal.

A New Automatic Honey-Extractor

BY T. W. LIVINGSTON.

I have long had my own peculiar ideas as to how a honey-extractor should *look* and *act*, and I recently decided not to keep them locked up in my "knowledge box" any longer, but reduce them to tangible form and let the bee-keeping folks have a look at them.

In working out the details of this machine, my plans were, of course, somewhat modified by my facilities, or want of facilities, for making it, and if I were manufacturing them, I would make some parts a little different, though the general plan would be the same.

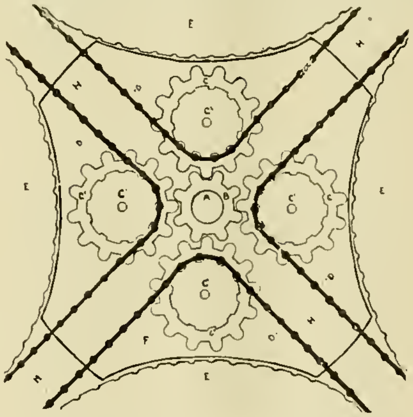


Fig. 3.—Showing Reversing Mechanism

The machine reverses the combs when desired while under full motion, and, I think, is not more complicated or expensive to make than the automatic extractors now in use. This model takes in the regular Langstroth frame, weighs 88 pounds, and the can is only 26 inches in diameter. I will try to explain how it works by reference to Figs. 1, 2 and 3:

Fig. 3 is a diagram of the gearing that operates the reversing mechanism.

Fig. 2 is the reel removed from the can, and the friction disc B', which is fastened to the cogwheel B, is removed from its place and inverted on top of the reel.

Fig. 1 is the complete machine ready for operation.

In Figs. 2 and 3, A is the upright shaft that carries the reel. B is a cog-wheel that turns on the shaft A and is fastened to the friction disc B'. F is the frame which is fastened to the shaft A, and which carries the cog-wheels CCCC, which are cast solid with the sprocket-wheels C'C'C'C', which by the chains DDDD, operate the wheels EEEE, which are constructed on the ends of the comb pockets E'E'E'E'. The wheels E are held in their places by the chains D, and the braces HHHH, and the lower ends of the comb-pockets E', are pivoted to arms fastened to the shaft A. When the reel is revolved, all the parts carried by it maintain their original positions with regard to it, but when the brake P (Fig. 1) is applied to the friction disc B', the cog-wheel B ceases to revolve with the shaft A, and then causes the wheels C, C', and E to revolve on their own axes until the brake is released, when this rotation ceases. Meanwhile the reel has been, and is, steadily revolving. The operator can easily see by the appearance of the reel while revolving when the reversion is complete, and releasing the brake, they remain in that position until it is desired to reverse them again. While the reel is revolving the centrifugal force draws the chains taut, and there is no perceptible friction on the wheels E, which revolve on their *theoretical* axes. I used the A. I. Root Co.'s gearing, which is heavier than is needed for this machine, and I have arranged the dif-

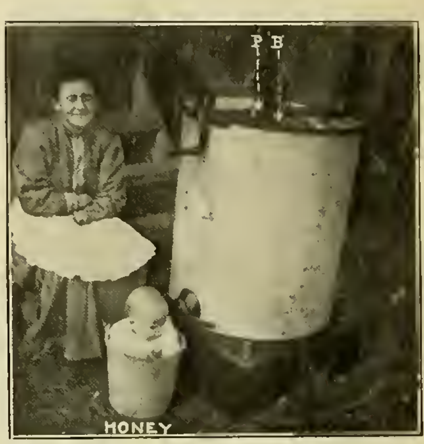


Fig. 1.—Honey-Extractor Ready for Operation.

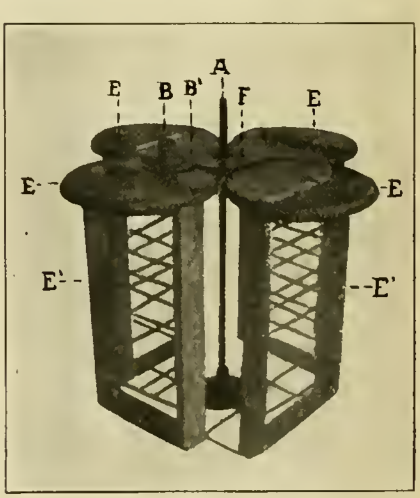


Fig. 2.—Reel Removed from Extractor Can.

ferent parts as I like them best, and made the can deep enough to hold about 200 pounds below the reel.

If any should presume to say, "the thing won't work," I refer them to Fig. 1, which shows the machine complete, together with some choice "honey" (the very best kind) "taken" with it. (It was *"extracted"* after the ceremony of snapping the kodak was over.)

Leslie, Ga.

Increase by Dividing Colonies

BY C. P. DADANT.

Mr. Daoant:—I have read your book, "The Hive and Honey-Bee," and last spring purchased a colony of bees in a large box-hive. During the summer I noticed that the bees were lying out of the hive and clustering about the outside in large numbers. I concluded to try an experiment. I put a movable-frame hive under the box-hive, so that the two would freely communicate. After a few days, noticing that the bees seemed to have moved into the lower hive, I removed the upper hive and put it on a new stand. At first it seemed to have but very few bees left, and the new hive seemed to have all the working force. But within a very short time the old-hive colony became the stronger again, and I now have 2 good colonies. Why would not this be a good method of "swarming" the bees to avoid all the trouble incident to natural swarming and having to watch the bees? What do you think of this method? Has it ever been used? Illinois.

The above method was probably the first one ever used for making artificial swarms, being the most elementary and simple. Bernard De Gélieu, Radouan, Soria, and others, in the early part of the 19th Century, used "dividing hives," that is, hives which were made of several parts to be separated either horizontally or vertically, as desired, each part or section being removed from the others at will ("The Hive and Honey Bee," pages 135-6, latest edition). This was before the time of movable-frame hives, and there was no way to go into the details of artificial swarming.

When you add a section or a hive-body under an already well filled hive, during the spring laying, at the beginning of the flow of honey, the queen moves to that part as the bees fill it with comb, and she begins laying eggs in the cells, abandoning the part which is already filled. Just as fast as the young bees hatch out of the abandoned portion the workers fill the cells with honey, for they always aim to keep their honey above the brood-chamber. By the method which you have pursued, if you had not separated the two hives to make a division, the bees would have eventually filled the upper hive entirely with honey. Your removal of the upper hive was done after the queen had moved down to the lower hive and before the brood in the upper hive had become too old to supply young queens by the rearing of queen-cells. If done at any other time, the operation would have been a failure. At the time of the removal the upper hive was left with only young bees, brood in all stages and honey, and they had to rear a queen, while the lower hive secured the old queen and all the working force. It was a good combination and therefore successful. But apiarists prefer to make absolutely sure of what they are doing, and that is why they practice what has lately been called "shook-swarming," by which method or methods (for there is a great variety of ways) they do about what you did, but make sure of securing the queen in the new hive and young brood or queen-cells, or sometimes, also, a queen in the other part.

In the different methods of swarming by artificial means there are a few points which must be kept in mind:

1st. A queenless colony is not well suited to build combs, because queenless bees build drone-combs exclusively. This is a natural instinct of the bee. As long as they have a queen at hand that is likely to make a demand for worker-cells in which to lay, a queen young and vigorous, that is not fatigued by protracted laying, they build worker-combs. Whenever the queen has a large amount of worker-combs ahead to be filled, the bees turn their attention to building large cells which take less time and material, and may be used indifferently to rear drones or store honey. There are times, also, when the queen is tired of laying eggs that are fertilized as they pass the spermatheca, and desires to lay drones-eggs which, not being fertilized on the way, give her perhaps less pleasure but also less fatigue. At those times the bees will also build mainly large cells. When they have no queen, they naturally build such combs as are most readily built, therefore large cells. Such combs are not desirable in the brood apartment of the hive, for a large number of them is sure, sooner or later, to secure a large number of drones, and a consequent increase of expense without profit. It is, therefore, of the utmost importance that the portion of the colony which is left queenless for any length of time be entirely supplied with combs, at least until a young queen is hatched.

2d. A sufficient number of young bees should be secured in the hive in which no hatching brood is left, to help care for the first eggs hatched into larvæ. Very old bees, such as have roamed over the fields for days, are unsuited for brood-rearing. Their jelly-producing salivary glands are more or less atrophied from non-usage, and young bees are much superior to them for feeding the young larvæ. In the economy of a natural swarm, young bees that are then taking their first flight will be the ones to remain in the hive to care for the first brood. This has been ascertained beyond the possibility of a doubt, through the introduction of queens of different races in colonies at different stages of the season. A swarming colony of common bees, containing an Italian queen inserted only a few weeks before, and having only a few young Italian bees along with the swarm, will show this fact very plainly, for those young yellow bees will be the ones to remain at home in the new abode, to care for the new brood.

3d. The colony which is deprived of its queen when the division is made must either be supplied with a new queen at once or must have means of rearing one. By the introduction of a queen reared previously, or purchased from a reliable breeder, we serve several purposes. We save time, because if the bees are compelled to rear their own queen, it will be 2 or 3 weeks before she is able to lay eggs, from the time when the division has been made. The furnishing of a queen of selected stock is also an advantage, because we may prefer the stock of one colony to the stock of another, either because they are more gentle, or more productive, or nearer to our ideal. The improvement of the races can only be carried on through the changing of the queens, and swarming time is the proper time to make changes in races without much loss of time or money.

4th. If the queenless portion of the divided colony is allowed to rear its own queen, it must have young larvæ, and must be carefully watched so as to prevent it from sending forth another swarm. It often happens that queenless colonies containing a large amount of brood, in a very warm season and when the crop is heavy and the cells filling rapidly, will rear a large number of queen-cells and swarm to excess with the young queens first hatched. If we aim to control swarming in a positive manner, we must watch this matter also.

Personally, the objection I have to this method of dividing very large colonies is, that I want to keep these large and powerful colonies undivided in order to secure the honey crop from them. We always have a number of colonies of fair strength which are yet not powerful enough to produce a large honey crop. If we can keep our largest colonies intact and turn their efforts to honey-production, we can secure our increase from the very colonies that would not swarm or produce a surplus, for they are generally strong enough in bees at the time of the honey crop to make each a good colony. But, I do not wish to breed from these queens of rather inferior quality, so my aim is to get a supply of good, young laying queens of the very best descent, and use them in making artificial increase, whatever be the method employed. We want the best, strongest, most prolific stock that can be secured, combined with gentleness and honey-producing qualities. In bee-culture thus far, we have been able to secure only one of the progenitors, the female; the drone being still to a great extent beyond our control; but we should not leave anything undone to secure daughters of the best breeders.

Hamilton, Ill.

Uniting of Weak Colonies—Drone Comb in Extracting Supers

BY G. C. GREINER.

The "Editorial Notes and Comments" in the November, 1908, issue, contain, under the heading "Uniting Weak Colonies," many timely hints for the beginner, that are well worth remembering, and they would not come amiss if some of our older bee-keepers would make a note of them.

For many years I have practiced uniting weak colonies almost every season, and I know, if it is properly done, it is generally successful. There are two main reasons, why colonies should be united, first, to prepare them for a prospective honey-flow, and second, to bring them up to a wintering standard. The former may be done in the forepart of the season, a week or two before a honey-flow is expected, and the latter late in the summer or early fall, early enough to give the bees a chance to arrange their winter quarters properly before winter sets in.

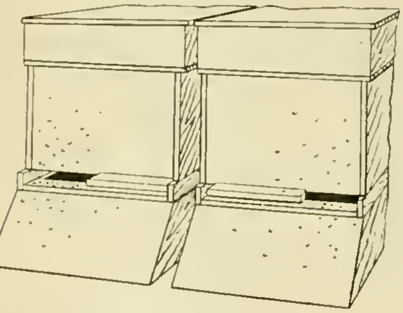
To prevent antagonistic feelings, and perhaps the annihilation of one or the other, I have always considered it a desirable feature that the 2 colonies to be united should sit side by side for a week or two before the operation is performed. Each one should be reduced, by means of a division-board, to one-half of the regular frame number our hives contain, and placed in the opposite halves of the 2 hives. If the bees are then compelled to enter their respective hives by reduced entrances, the openings being on each outside, they will soon line themselves to their homes without interfering with one another.

It is not always the case that colonies we wish to unite are sitting side by side, in fact, they oftener do not, but we always know weeks ahead which ones need doubling up, and it is an easy matter to shift them gradually together.

The manipulation of uniting is a very simple affair, which is all the more facilitated if we have a few hives that hold a frame or two more than our regular standards. The hive to receive the 2 colonies should have a tight-fitting division-board, and the entrance be divided by a block to leave the openings on each outside similar in shape and appearance as the 2 hives presented.

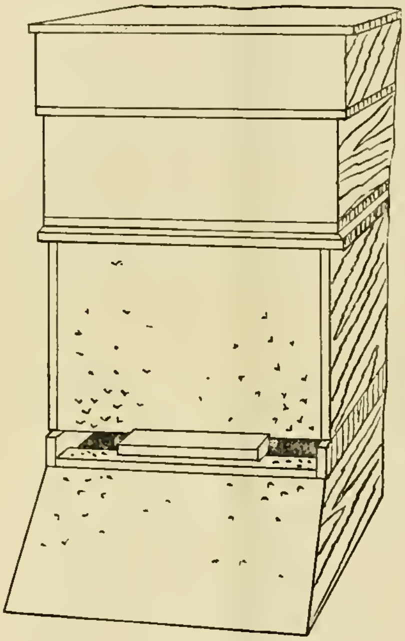
When ready to operate, set the 2 hives a foot or two ahead of the old stands, and place the prepared one midway between the stands the 2 occupied. Then carefully open the 2 hives, one after another, and transfer their contents into the one. By using a very little smoke, the whole job can be done bare-faced and bare-handed, without the first intimation of a sting. Any bees that may be left in the hives after the combs are removed, can be dumped on the ground without much ceremony; they will all find their own homes, and all will be peace and harmony.

From two weak colonies treated as here stated just before the white clover flow, I have taken, this season, (1908), 28 sections of nearly all finished clover honey. They were so crowded that I decided to divide them again, filling out their hives with empty combs, and when the honey season closed, I extracted a set of extracting combs, Jumbo size, from each one of them. This may not be a great achievement, nevertheless I consider the 28 sections clear gain, the result of uniting the two. If left separate, neither was strong enough to work in sections, but combined under one section super, they were in practically the same condition as a populous, full-sized colony.



Before Uniting.

When weak colonies are united to fit them for winter, which is generally done later in the season, it may be done in the same way as for storing surplus, except, that the division-board should be removed before winter sets in, the combs, bees and all, slipped together, and the division-board used to fill out the vacancy on one side or the other. If we have no choice between the queens, we need not worry over their affairs—they will settle that among themselves, otherwise we have to remove the one we wish to discard.



After Uniting.

In regard to drone-comb in extracting-supers, I emphatically agree with the editorial referred to. My advice is, "don't use it." It is a waste of precious space, and misleads the bees. My experience of many years has taught me that bees are always slow to accept drone-combs for storage in extracting supers, but this year (1908) they outdid themselves—they actually refused to use it. I extracted some combs that were all-worker comb except now and then a little patch of drone-comb. The former was filled and capped to the last cell, while the latter was empty to the last cell, but every cell was bright and polished, showing that the bees expected to have the queen stock them up with eggs. In this, however, their expectations were blasted by reason of the excluder.

Among my supply of extracting combs I have a few sets of very nice, clean drone-combs; they were gathered up during past years because I considered them too valuable to melt up, but kept them for extracting combs in cases of emergency. Being crowded for storage last summer, I used them in my extracting supers as necessity demanded, one or two in a place, mixed in between worker-combs. As a farther test, I placed some of these drone-combs in the middle of the supers, others on the outside next to the hive walls, and watched them from day to day. In either case I noticed the same behavior of the bees—they filled up the worker-combs rapidly, while they ignored the drone-combs almost entirely.

Hereafter I shall try to use nothing but worker-combs for the production of extracted honey.

La Salle, N. Y.

Spring Work With the Bees

BY G. M. DOOLITTLE.

As the sun advances farther and farther northward with each day at this time of the year, a feeling will steal over the wide-awake bee-keeper, to see how great an amount of cash and fun can be gotten out of the bees by keeping them in the best possible condition to take advantage of the harvest or harvests of honey when they come. To this end he or she will begin looking about to see if everything is in readiness for the summer campaign, and having this so, then the first suitable days for the bees to fly will be utilized in setting the bees from the cellar, if cellar-wintering is practiced, or in knowing that all entrances are open and free from dead bees, if the bees have been wintered on the summer stands.

As soon as spring fairly opens, it is best to go over all the hives in the apiary, seeing that all dead bees are off the bottom-boards and out from between the bottoms of the combs, otherwise colonies which have lost many bees during the winter are left in bad shape to build up in time for the harvest, especially if this harvest comes early in the season, as does that from white clover, which is the general source of surplus with the majority of bee-keepers.

I have many times been called from 2 to 4 weeks before the clover bloom to see what was the matter with the bees, as a part of the colonies did not seem to be doing as well as they ought, only to find that he bottom-board was covered with dead bees, and at places piled clear up into the bottoms of the combs, while the bottom of this pile was full of small maggots, the mass of dead bees having become damp and wet through decomposition, which caused a stench almost unbearable. No colony of bees can thrive under such circumstances. Of course, this does not apply to cellar-wintered bees, unless the hives have tight bottom-boards, for with loose bottoms the boards should all be changed when setting out, by giving the first colony set out a clean board from the store-house, and setting it on the same, when the one it was wintered on is cleaned and put on the stand of the next, setting the second colony taken from the cellar on the same, and so on till all are out and on clean boards.

At this time we should also know that each colony has sufficient stores so that brood-rearing may go on to the best advantage, for bees will not breed up properly when there is fear of starvation from lack of stores. All colonies should have at least 10 pounds of honey and 15 to 20 pounds is better thus early in the spring. If any are short of 10 pounds they should be supplied by feeding, and the very best way to feed at this time of year is by setting in frames of sealed honey that have been reserved for this purpose from the season previous. There is nothing that pays the apiarist better than to carry over one or two combs of honey for each colony wintered. from the previous season. to use for feeding purposes the next spring.

Having the bottoms all sweet and clean. and knowing that all have honey enough to carry them in prosperity till pollen becomes plenty from the elms and maples, there is nothing more necessary till the pollen arrives, except to see that all colonies are tucked up as warm and comfortable as possible. At this early period of the season, we must be on our guard about opening hives when it is very cool, and especially about allowing frames having brood in them to stand outside of the hive for any length of time unless the mercury is up to 70 degrees or above; otherwise the brood will be so chilled that it will be removed, in which case we make a big loss, often more than counteracting any gain we may have made.

Bees can be safely handled with the mercury at 50, if we do not expose the brood to the outside air for more than from half a minute to two minutes' time, the two minutes doing less harm in a still, sunshiny day than the half minute will do in a cloudy, windy day. Then, if the mercury is from 70 to 90 in the shade, as is sometimes the case with the early spring days, we will have to guard about the bees robbing, for there is no time of the year when bees are likely to get demoralized through the opening of hives, as on the hot days of early spring. At such times it is best to wait about opening hives till after 3 or 4 o'clock in the afternoon, when we will work as rapidly as possible, and as long as we can see, leaving the necessary vacant space for setting in the combs of honey till near dark, when they can be put in safely, without danger from robbing, as any and all colonies will get things straightened up by morning so that they can care for themselves. The one who gets robbing started through feeding during the middle of hot days in early spring, will not need to be told the second time to avoid "the very appearance of evil."

When pollen becomes plenty from the elms and maples, we go over the apiary again, looking after the amount of stores, the goodness of the queens, and, if we think that way, clipping all queens which are good enough to keep. There is a difference of opinion about this clipping business; but the most of our practical bee-keepers still think it pays to clip. In this age of non-swarming I do not consider that clipping is as essential as it was when natural swarming was allowed, still, all there is against clipping, is the time it takes to find the queen and clip her; and I sometimes think that this is more than offset by the ease of finding her when we wish, ever afterward during her lifetime, as a queen properly clipped can be found, by the eye "catching on her," very much more easily than can one having her wings.

In clipping I generally cut off from two-thirds to three-fourths of both her wings on one side of the thorax; and for experience's sake I have many times cut off three-fourths of all 4 wings, and from these repeated experiments I can see no difference between the longevity or the laying qualities of such queens, and those which have their wings as not molested by man. And queens thus denuded of their wings attract the "eye," so that they are sure to be seen, almost without effort, whenever and wherever they come under the vision, so that they really do not have to be looked after.

Where colonies are found having poor queens, which are laying only a little, and scattering their eggs all about through the cells of the combs, rather than forming a compact brood-nest, such queens are killed and a weak or weaker colony united with them, by setting the weak colony on top of this now queenless colony at nightfall, *a la* Alexander.

All colonies should certainly have at this time at least 10 pounds of stores to carry them profitably as to brood-rearing over till apple-bloom. Don't be a "penny wise and pound foolish" man in trying to see how much you can economize as to stores at this time of the year, for nothing counts as great an advantage during the harvest, as having the bees feel rich during the early spring months. Having good queens and plenty of stores, our spring work with the bees is done.

Borodino, N. Y.

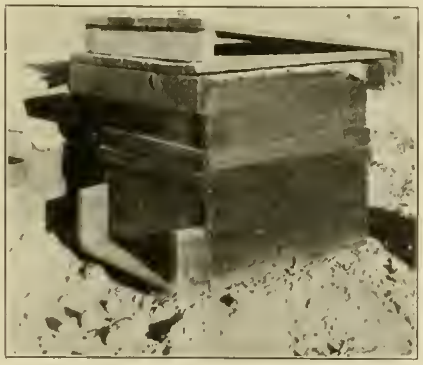
Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

Skunks in the Apiary.

The apiarist who lives among the hills has had more or less experience with skunks—I mean the four-footed rascals that come prowling about at night and destroying bees—not two-legged ones that sometimes does the bee-man up brown by robbing him or taking undue advantage of him to his sorrow.

A skunk will not tear a hive to pieces; neither will it knock it over in its attempts to rifle it of its contents. The skunk has little chance of getting honey from a bee-hive, though it would like to do so very much; the animal is too small to apply sufficient strength to damage a hive. Not being able to get at the honey-combs, it does the next best thing it can to have some honey. It comes to a hive, scratches about the entrance to cause the bees to come forth; finding the little animal molesting their abode they proceed to punish him, or, at least, they imagine they can inflict condine injury to him. They pile into his fur—hundreds of them do to his skunkship's delight—he's so thickly furred that he is proof to the bees' darts.



A Skunk's Bee-Trap.

When the skunk thinks he has enough bees for one time he rolls over and over in front of the hive, thereby killing the bees. Sometimes he will scratch again and bring about the destruction of more bees. Then he picks the little slaughtered honey-gatherers up and extracts the honey they contained. Often a colony suffers greatly by such depredations, in fact, the whole population is depleted. The constant or repeated rolling and scratching in front of a bee-hive, is well illustrated in the little halftone here shown. I saw the work; I made the photo.

I was on a short visit to Mr. Patrick Keating, near the New Almaden Quicksilver mines a few years ago. Pat has quite a respectable sized apiary, as I have stated and illustrated heretofore in the American Bee Journal. One day Pat said to me, "Come up with me to the bays; I want to show you phat a foin burd has been doing in the afiary," or something pretty much to that effect.

I went up the hill to the apiary, and over at the further end Pat pointed to one of the hives, and said, "Just look at that; did youse ever see the loike?"

I admitted that I hadn't, and to be pleasant I thought I would cross-question him:

"What did it, Pat; do your chickens come away up here to dust in front of that bee-hive?" I asked.

"Be off wid yeas; do ye think my biddies are such fools as to risk being stung by coming in broad daylight and dhusting right forninist those pesky stingers? No, it is another kind of burd that dusts there; Oi'll fux the beggar, so Oi' will, Oi' will."

My friend was much excited by this time and he gave some characteristic flourishes to his language, which ordinarily was choice and free from Hibernic burrs.

"What will you do to chase him away?" I ventured to ask.

"I won't do any chasing; I'll set a good supper for him to-night," he said, in plain English.

Then I knew it was a skunk that was the "burd of rare plumage" that was doing the dusting. Then, out came an egg and a bottle of strychnine from Pat's pocket. With the point of a penknife he inserted a grain or so of the stuff in the egg and buried it in the dirt in front of the hive.

The next morning a big skunk was found half way down the hill toward the creek where the varmint was proceeding for a drink to stop the fiery pain the poison made in his interior, when he died. That ended one of Pat's troubles and one of the bees' worst tormentors and destroyers.

At the Monterey bee-keepers' meeting the matter of depredations by skunks was considered. Mr. Vernon Townsend was sorely bothered by them. He was killing them off by wholesale. He poisoned them in a manner similar to that just described and used by Mr Keating. Other bee-keepers said they did the same.

Bees that are much bothered by skunks become very vicious; they seem anxious to repel any invader of the apiary. And 'tis small wonder when their slumbers are disturbed by night marauders so frequently. Why, it is enough to give any one or anything nervous prostration; don't you think so?

That Queer Disease — Doing Things at Berkeley University.

I was over to the University early in the month to see Dr. Anderson of the Dairy School, and before returning I thought I would see Mr. Ralph Benton, of the Bee Department. A hunt through the "Bug Building" did not reveal his whereabouts; thence to the apiary back of the "Gym," near by. I found the gate to the apiary open, but my man was not there. I ventured in and looked at the "exterior condition" of the colonies to see how they fared in comparison with mine. The day was not a propitious one, as have been few days since Christmas, still, many bees were flying, and, I suppose, working on the bloom of the acacias and the eucalpyti, of which there are many about Berkeley.

A few of the hives did not show much animation, wherein they differed little from some of my colonies. Some of these weaklings were the ones troubled with the peculiar disease I have heretofore commented upon in these columns. There were many bees long dead in front of the entrance, and a number more were giving up their last breath, they having gotten outside the hive to let the life-coil slip away from them.

Mr. Benton still not heaving in sight, I ventured to poke my head into a room in the basement of the aforesaid "Bug Building." Sure enough, the gentleman I sought was there. He had several of his students in apiculture about him, and they were making a syrupy food for the bees, as he told me—some of the colonies were short of provisions. The students, some of whom were Philippinos, went on with their work while Mr. B. and the writer held short converse. Then the boys went out to dish out the rations to the hungry bees. Believing the "chief chef" of the feast should be present to superintend the banquet, I was about to take my departure when Mr. B. assured me there was no need of my being in a hurry to go, as the boys knew how to attend to the distribution of the life-giving syrup.

Then I remarked that the above-referred-to disease was prevalent in the apiary, and wondered if he (Mr. B.) had ascertained what it was. I had left some specimens of my diseased bees from the same cause, with the university man a few weeks before. He replied that he had not yet determined what it was, but one of the students had the matter under pathological study and was making fair progress with the subject. We then spoke of the proposed change in the foul-brood law, which I will notice in another item.

A Queen-Bee Snag.

The attempt to amend the Foul-brood Law of California and graft on a provision to make it one of the close concerns of the University of California, met with more objection than was at first expected, so I learn. That the main provisions of the law will be good is not doubted; to get rid of malignant bee-diseases is a disideratum much to be desired by the California apiarists. A casual perusal of the law as drafted by Mr. Benton, early in January, caused me to remark to that gentleman that some provisions were objectionable, especially that requiring all queen-bees and attendant bees brought to the State, or passing from one county into another, to be inspected by a university pathologist or his deputy, or by a county foul-brood inspector, before they could be delivered to the consignee for use in his apiary. I went over the injustice and needlessness of the provision in the case of queens coming in mailing-cages. The author of the provision, thought it well then to change the wording. I wrote this Journal of this proposed provision, as I also did the editors of Gleanings in Bee Culture.

I understand there was quite a time over the consideration of the bill at the Los Angeles Convention at the meeting, at the close of January. It was a hard tussel; a committee was out nearly the whole session of the meeting wrestling with the several provisions. I believe the queen-bee detention was knocked out. The sentiment of the meeting seemed to be that if the several county boards of supervisors appointed competent apiarists as foul-brood inspectors, the dread disease would be soon banished from the State. They urged that the supervisors hereafter name practical bee-men as inspectors.

The convention, however, went on record as favoring the bill after they had made some changes, one of which is that the person who is to have charge of the pathological work at Berkeley, be a university graduate—it doesn't make any difference from what institution—and that the State allow a fixed sum per annum to carry on the work in conjunction with the present county inspectors.

How the law will work if it should pass the legislature, I am not able to tell. To have the work done by competent men will be a blessing to the bee-keepers, even if the people's taxes are increased somewhat to help the matter. Then, it is doubtful if it will be any better done by a college man than if it were done by one who had a thorough training somewhere else. The greatest work done in California for the fruit-growers was done by a man who never had even a high school education. His work on entomology has been introduced into the schools of the State. It was he who started the crusade in an intelligent way against the insects that were ruining the fruit crops of the State. His name was Matthew Cooke, and he studied the subject while he made fruit-boxes in a factory at Sacramento.

A Wet Year Indeed in California.

Up to the first of January the rainfall was much below normal, and many persons believed we were in for another dry year. Of course there are always some persons who set themselves up as weather prophets, and a word from them is carried the country around as gospel truth. But, fortunately, the wheels of industry do not stop on their account. So the wise farmer goes on and plows his land, sows his grain, and
And so it came to pass this year

And so it same to pass this year that this style of farmer is now lieing back and taking things easy; he's happy, and wears a broad grin when he meets the pessimistical rancher. For the rain came, and came, and came, and at this writing (Feb. 13) it is still coming. What the end will be I know not; this I know, however, the hills and mountains from Del Norte to San Diego, and for the full width of the State where they are not covered with snow, are so saturated with water that torrents are streaming down their sides into the valleys below; some of the latter are flooded and in places crops have been ruined. On some of the river islands in the upper central portion of the State the water will not recede in time for the farmer to get in a crop this year. But the land in nearly all cases will be so enriched by the sediment deposited by the flood-waters that for years after great crops will result. And this will be the bee-man's year to get a record-breaking harvest, *provided*, the climatic conditions are just right during the blooming of the nectar-secreting flowers.

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Transferring Bees.

What is the best way to transfer bees?

New York.

Answer.—Probably the best way is to let the bees swarm, hiving the swarm in a movable-frame hive, and 21 days later to add the rest of the bees to the swarm and melt up the combs. If you prefer, you can transfer during fruit-bloom, and your bee-book will give you instructions for that.

Bees Fighting and Killing Each Other.

My bees are fighting, and seem to be killing a good many. What is the cause, and what can I do to stop them? I thought it might be the young bees they were killing out.

Oklahoma.

Answer.—It may be that there is fighting because there is attempt at robbing. Young bees are not likely to be attacked.

Nucleus Method of Increase.

Would you advise me to make increase by the plan C. W. Barr gives on page 73?

Subscriber.

Answer.—You might use his plan, except as to rearing queens. He lets a nucleus start its queen from its own brood. If you want queens, don't think of having a queen-cell started in anything but a strong colony.

Wired Comb Foundation.

Can a sheet of finely woven wire be rolled between 2 sheets of wax in making the foundation for brood-combs, to take the place of splints or wiring frames, as now practised? The sheets could be made the size needed, or the wire screen could be woven one-inch mesh and could readily be cut with the scissors.

Colorado.

Answer.—Yes, such a thing has been advertised and in use for years; the Van Deusen flat-bottom, wired foundation, upon which there is a patent.

Tapping Sugar-Maples for Bees.

Can I tap sugar-maples the first of April to stimulate the bees, and would it be good for them? They fly freely here after the first of April, and I have fine trees.

Virginia.

Answer.—I don't know. To tap sugar-trees the first of April would seem to give the bees something to do when forage is scarce, and in good weather it ought to be all right. In bad weather it might entice them out when they would be better off at home. Of course care should be taken not to have them drown in the sap-pails.

Pure Food Law in Arizona.

I write for information as to the pure food law as to honey. Several here have bees. Some feed sugar to their bees and then extract it and sell it as pure honey. One this evening told me that whatever the bees put into the hive was classed as honey. As I understand it, honey is the nectar from the flowers, and has a different analysis from sugar-fed honey. They also say that when one sells it without a label on the bottles the law will not reach them, no matter if they say it is pure honey.

I am selling my last year's crop of pure honey. I put a label on it and back it up, and whoever eats it says it is all right. Well, these other parties selling sugar-fed honey are hurting the honey-markets badly, as the people say they "got bit" once and are afraid to buy more for fear it is the same class of sugar. We have no pure food inspector in this part of the world. I would like to send them a sample of this sugar-fed Arizona honey.

I believe in giving the people something for their money. I am trying to build up a honey-trade, and am willing to go the route to punish this class of impostors which prey upon the laboring class as a wolf upon a lamb. If they are right I wish to know it; and if I am right, I wish to learn where I can send some of this arid honey to an inspector to be examined.

Honey here is sold at too high a price. California "wild rose" sells at 40 cents per pint; 75 cents per quart; and $1.75 per gallon. I sell some to the grocers so that they can sell pints at 25 cents, quarts at 50 cents, and gallons at $1.25. Comb sells here at 25 cents.

The coming season I expect to have between 150 to 200 colonies, and I expect to retail comb honey at 15 cents. The people will buy more and create a larger market for honey, so in the long run I will gain.

Arizona.

Answer.—If sugar is fed to bees and stored by them, selling such a product as honey is certainly in violation of the pure food law. But the U. S. pure-food law applies only to matters going from one State to another, and I don't know whether you have any Arizona law to touch the case. Wm. Rohrig, Tempe, Ariz., probably can tell you all about it. Any man who feeds sugar to be sold as honey is standing in his own light, and will be the loser in the long run by it, to say nothing of the harm he is doing to other bee-keepers.

Number of Colonies to Clear $600—Best Hive—Missouri for Bees—Alfalfa and Red Clover.

1. How many colonies of bees will I have to keep to clear $600 per year?

2. What is the best kind of hive for money-makers?

3. Is Missouri, in the central or southern part, a good place for bees?

4. Are alfalfa and red clover good for bees to store honey for the market.

Wisconsin.

Answers.—1. I don't know. A good bee-keeper in a good locality ought to do it with 100 colonies or less.

2. A 10-frame dovetailed is certainly one of the best.

3. Yes.

4. Alfalfa is excellent in most places west of the Mississippi. Red clover is not generally counted on anywhere.

Distance Bees Go for Nectar—Home-Made Wax-Extractor.

1. How far will Italian bees go for nectar in a fairly good clover location, with 100 colonies in the apiary and about 100 acres of alsike within 2 miles of the apiary?

2. Do you consider a double glass cover preferable to single in a solar wax-extractor?

3. Give a plan for making a home-made solar wax-extractor.

Canadian Boy.

Answers.—1. Italian bees, or any other bees, work perhaps to good advantage a distance of 1½ to 2 miles—perhaps farther. In the cases you mention they would probably go that distance.

2. Yes.

3. See reply to "Iowa," page 69.

Painting Hives—Winter Packing—Uniting Colonies.

1. In your answer to the question as to whether hives are better painted or unpainted, you say: "Mr. Doolittle's idea is that moisture will pass through unpainted walls better than through painted ones." If unpainted hives will let dampness and moisture pass out, will it not also let dampness and cold pass in?

2. Will not packing hives in tar-paper and other packing material prevent moisture from passing out the same as a painted hive?

3. I united some bees last fall by the following plan: I moved the hives of the colonies to be united toward each other a foot or so a day so that they could mark their location, until I had them close together. I then raised one hive gradually, still allowing the bees to mark their location, until I had it on a level with the top of the other hive. Then I set the hive on top of the other with wire-cloth between. I left the hives this way 4 days and removed the wire-cloth. All of the colonies united this way did splendidly, except two, which fought until they killed each other. Did I remove the wire-cloth too soon, or what was the matter with the ones that would not unite?

4. When uniting bees what are the essential points to be considered?

Virginia.

Answers.—1. Yes, moisture will pass inward through the wall of a hive just as well as outward, *provided* conditions are reversed. Do you find that commonly happen? That is, do you find the outside air reeking with moisture and the air inside dry? Instead of that the outside air—especially in winter, the time we are most anxious about—is dry, while we have moisture and mold inside the hive.

2. No, a good coat of paint is entirely impervious to water; the packing is not. Even if it were, the moisture inside the packing and outside the hive-wall can not do the harm it can inside the hive-wall.

3. After being over the wire-cloth 4 days I would hardly have expected any trouble. It may have made a little difference if, on removing the wire-cloth, you did the work less quietly than you did with the others.

4. Perhaps the one essential point is that the bees shall have the same hive-smell. They will unite better if filled with honey, and also if discouraged or frightened. They will unite better if one colony is queenless. Lately it has been advanced that they will unite peaceably if *both* colonies are made queenless only a few hours. Of course, one of the queens will be afterward returned.

Artificial Increase.

I have been reading in "A B C and X Y Z of Bee-Culture," an article on page 310, by W. W. Somerford, on artificial increase. I do not fully understand, and am at a loss to know how a new queen can be hatched in the nucleus, as the old queen is caged in the parent hive 10 days previous to the division. Do the worker-bees put a worker-larva in the queen-cell and feed it the royal jelly?

A Subscriber.

Answer.—No, the bees don't put a larvæ into a queen-cell, but they give extra feed to a larva in a worker-cell, and they enlarge its cell into a queen-cell. Such cells are called post-constructed cells, or emergency cells, in contradistinction to pre-constructed, swarming-cells, or supersedure cells.

Royal Jelly for Queen-Cells—Changing Queens — Uniting Weak Colonies—Musty Combs, Etc.

1. After you have made artificial queen-cells, where do you get the royal jelly to daub the inside of the queen-cells before you transfer the larvæ to the cells?

2. I have a colony of black bees in my barn, and want to change the queen the coming spring. Suppose that after I get the new queen, I can not find the old one the first time I look the frames over, for I think there are 15 of them. What will I do with the new queen until I do find the old one? How long will she live in the cage that she will be mailed in?

3. What strain of bees would you advise for this section of country? I am at about 43 degrees latitude, and 1300 feet elevation, and at some seasons we have 90 days' sleighing.

4. When you double up light colonies in the spring, do you remove the queen from one and put the one that has the queen with the one that does not have any queen, or do you add the one that has the queen to the queenless colony?

5. What will take the musty smell from old combs? If I put them in an old colony will the bees clean them up and use them?

6. Will it do to slip a full sheet of foundation in between the brood-frames in April or May?

7. What season of the year will bees first start to make comb?

8. How long will it require or take to draw out a sheet of foundation so that the queen will lay eggs in the cells? New York.

Answers.—1. The only way is to get it out of queen-cells that the bees have started. For this purpose you must previously let the bees start cells in a queenless colony.

2. If the weather is warm—and you ought not to order a queen till it is warm—the queen will live a week or more in the mailing-cage you receive her in. If necessary you can renew the candy, or give a little honey. If you can not conveniently keep the cage in a warm place, you can put it over a strong colony, covering up well.

3. Perhaps nothing will do better than Italians or hybrids. The probability is that if you get Italians you'll soon have mostly hybrids.

4. Doesn't matter such a great deal which way. Generally the weaker one is moved to the stand of the stronger, as the weaker it is the fewer bees can be lost by returning to the old stand. If there is no great difference in strength, unite on the stand of the colony that has the queen, as queenless bees will stay where they are put better than queen-right ones.

5. The bees will take away the musty smell and clean them up all right. Only don't discourage the bees by giving more than 1 or 2 musty combs at a time.

6. Don't give foundation till the bees are gathering. Certainly not before fruit-bloom or dandelion, and perhaps better not till clover-bloom.

7. Not till they need it. That may be first in fruit-bloom.

8. I don't know. Less than 24 hours in a good flow.

Best Comb-Honey Hive—Getting Bees.

1. What bee-hive is the best for comb honey?

2. Where can I get a good breed of bees at a moderate price? Indiana.

Answers.—1. I get good results with the 8-frame dovetailed, but if I were to begin anew I would have hard work to decide whether to use the 8-frame or 10-frame. Certainly for any one who does not pay the closest attention to his bees the 10-frame is better.

2. You will find in the advertising columns of this Journal several who offer Italian queens, and you can hardly have better stock. If you send to more than one for an untested queen from each, the expense will be light, and you will stand a chance of getting an excellent queen in the lot.

Tar Paper for Wrapping Hives—Wax Press or Extractor.

1. Would it pay to wrap hives in tar paper for spring protection? I see some favor it, while others do not. Why is there this wide difference?

2. What is the best kind of wax-press or extractor? Do you still use the Root-German? Is the Hershiser press enough better than any other to make it an economical press?

Is Mr. Byer going to tell us hom he came out with the Hershiser press?

Iowa.

Answers.—1. There is a wide difference in climate. While it might not pay in the far South, it might pay well in the far North. Locations differ. Your apiary may be in an exposed place, where the wrapping mentioned may be of great service in warding off the chilly blasts of spring, while another apiary a mile away may be in such a warm corner that the wrapping is not so much needed.

2. I still have the Root-German, but as I produce comb honey exclusively, I don't have much use for a wax-extractor. From what others say, and from the construction of the Hershiser press, it ought to do excellent work.

Mr. Byer doesn't seem to me a very secretive sort of chap. I never knew him to have but one secret, and that was his name, when he hid behind a *nom-de-plume*. If he doesn't tell exactly what you want to know, there's no law against your sending him a question about it.

Improving Native Black Bees—People Living Over Cellared Bees.

1. Don't you think that if our native black bees had been as carefully bred from the colonies that always gave the best results, we would have had as good a race of bees as any in the world? They build nice combs and cap their honey whiter than the Italians. The only trait the foreign races of bees excel in is that they stick to their combs better when looking for the queen, which, in modern bee-keeping, is a great item. Don't you think that if an equal number of colonies of blacks and Italians were put by themselves where there were no other bees near them, and the only increase would be by natural swarming, the blacks would eventually run the Italians out? Would that not show that they were the stronger of the two?

2. Suppose a cellar is full of bees. Is it good or bad for the health of those who live in the rooms above the bees?

Illinois.

Answers.—1. Why don't you ask me something easier? It certainly is not the easiest thing in the world to keep Italians pure, black blood is asserting itself in spite of all efforts to the contrary, and that looks as if blacks were the more vigorous. Then, too, in Switzerland, where are to be found some of the foremost bee-keepers in the world, they are cultivating pure blacks and trying to drive out Italians. But you probably know that another trait in which Italians excel is that they are twice as active in keeping the bee-moth at bay, and that looks as if Italians were more vigorous. Besides, the older bee-keepers who had blacks and Italians side by side found that Italians stored more. If the Italians were better at the start, it seems that they would continue better, if there were careful breeding on both sides. But those Swiss. Perhaps they have a beter strain of blacks than we have.

2. That depends on the bee-keeper. If he's a poor bee-keeper, he will likely have a cellar with foul air and dead bees, and his cellar will be bad to live over. If the bee-keeper is all right, the cellar will be kept clean, with pure air. The air in my cellar is as good as, or better than, the air in the living-rooms, for the cellar-door is more or less open nearly all the time.

Leaning Boards Against Hives—Weight of Combs.

1. Is it right to lean boards in front of the hives that face the south? The wind is mostly from the west, northwest, and north. I did this to keep out the wind when it blows from the south, and to keep the bees from coming out on sunshiny days. They are out in the open. I also did this to keep out the snow from the entrances. The entrances vary in size from ⅜x3 to ½x2½, and a few ⅜x2½, all of dovetailed hives—8 and 10 frame.

2. How much will 10 frames of empty combs weigh, new and old, size 17⅝x9⅛x11-16, top-bar one inch? New York.

Answers.—1. Yes, it's a good thing to have the board there. Better take it away, though, when there comes a warm day in which you want them to fly.

2. They vary very much with age. A weighing just made shows 10 old ones weighing 13½ pounds. I have no new ones to weigh, but they would be much lighter.

Supers and Sudden Honey-Flow Stop—Kind of Brood-Foundation—Storing Comb Honey in Attic.

The careful reading of your book, "Forty Years Among the Bees," has called up the following questions:

1. In case the honey-flow stopped suddenly when you had supers tiered up 3 or 4 high, what would you do?

2. Where you use foundation splints and split bottom-bars, what kind of foundation do you use—medium or light brood?

3. In storing comb honey in the attic, what temperature would it stand without melting down?

You will likely hear from California this year, as it has been raining here almost every day for the past month—warm rains.

California.

Answers.—1. If 4 supers had been on any considerable time, it would be practically certain that at least 2 of them would have no unfinished sections except some of the outer ones. If the last 2 had just been given, one above and one below, they would be taken off as empties for the next year; some sections might be finished in the other 2 supers, but mostly they would be unfinished. In any case I would do just as at the close of any season, sort out the finished for market, others sufficiently filled but not finished would do for home use or home market, and others with honey in would be given to the bees to empty.

2. I have used mostly heavy foundation, just because I had a stock of it on hand. Medium ought to give good results, but light brood might be just as good with 2 or 3 more splints to the sheet.

3. Now you're getting beyond my depth. If an Illinois man should ask me that, I could say, "Don't you worry about that; it will never get hot enough to melt in an attic." But I don't know about your California attics. I have done a little experimenting, and there ought to be no trouble at any temperature below 143 degrees, as that is the temperature at which wax melts.

Divisible Brood-Chamber Hives.

Kindly give the manipulations of divisible brood-chamber hives. Louis Scholl promised long ago to tell how he handles his bees. Mr. Miller, the Canadian, uses the same hive. Does he ever tell anything? New Jersey.

Answer.—Perhaps no two who use divisible hives manage them exactly alike. I am not sure whether Mr. Miller has given his plan of management, but I think if Mr. Scholl happens to see this he'll be pretty sure to give what you want, for he's one of the best fellows in the world and likes to help others. In a general way I may say that advantage of divisible hives is taken by reducing to a single story at time of giving supers, although some make the first and second stories exchange places. This last, you will see, throws the honey that was above the brood-nest right into the middle, and the bees are supposed to get busy carrying it up into the supers for the sake of getting brood in its place.

T-Tins—Feeding Sugar Syrup in Spring—Thickness of Lumber for T-Super.

1. What is a T-tin? I see in the American Bee Journal the way to make the T-super, but I do not understand what is meant by the T-tin.

2. Would it do any harm to feed sugar syrup to the bees outside the hives in the spring, after they commence to fly, until the flowers bloom? Would it be likely to induce robbing?

3. How thick should the lumber be for a T-super? Maine.

Answers.—1. A T-super has no bottom, but to support the sections has 3 tin supports running crosswise. Each of these is made of a piece of tin so folded that a cross section looks like a T upside down: ⊥ You can buy T-tins of supply-dealers for about a cent apiece, probably much cheaper than you can get a tinner to make them for.

2. If you set the feed some distance from the hives it will not be likely to start robbing. But if the bees fly to it on bad days, it may cause loss of bees. Your neighbor's bees will help take care of it. In any case it will hardly do enough good to pay.

3. T-supers are made of the same lumber as hives—⅞ inch thick.

Queen Flying in December.

To-day (Dec. 29) the bees were flying, and I thought I would go out and look at them. At one hive I noticed a lot of smal drones, such as are reared in worker-cells, and, of course, I suspected right away that something was wrong. I stooped over by that hive to watch the drones, and caught a few of them, when there came a nice queen and alighted on the alighting-board, sat still awhile, and then walked slowly into the hive. This queen was too big to be a virgin, but must have laid these drones, it seems to me, and must have gone out to meet a drone. Is this not a most unusual thing for this time of year? I looked over all my hives last fall and this colony had a purchased queen not more than 18 months old, but must have superseded too late for the queen to mate. What do you think I would better do, get a queen as early in spring as possible, or give a frame of brood along in April from some other colony and kill the drone-layer at the same time?

Indiana.

Answer.—The whole affair is very unusual. The bees will be pretty old by the time they rear a queen, so it will be better to give them a queen. A still better thing, unless the colony is very strong, will be to unite it with another.

Fastening Foundation in Brood-Frames.

I am now overhauling my empty hives. I want to use full sheets of foundation in the frames. Just how do you fasten the full sheets in the frames to best advantage. Do you imbed the wire or use splints? Please be plain and give such minute instructions that the wayfaring man could not fail to understand. I understand that sometimes there is trouble caused by the foundation buckling, with a result of irregular combs, and we wish to avoid this. VIRGINIA.

ANSWER.—If you happen to have "Forty Years Among the Bees," you will find the matter very fully treated at page 87, and illustrations also given. Of course, I could not copy the 3 pages there given in the limits of this crowded department, but will say that the foundation is cut to the full inside width of the frame, and about one-half inch deeper than the inside depth. The upper edge is crowded into the saw-kerf in the top-bar, and wedged there by the usual wedge now generally furnished with frames. The lower edge is held between the two halves of the divided bottom-bar. If you have not the divided bottom-bar, let the foundation be cut to come down just to the bottom-bar, and fasten to the bottom-bar with melted wax. Then the foundation-splints are put in vertically, one something like an inch from the end-bar, and the others distributed at equal distances.

You are right that there is trouble with buckling, and if buckling is avoided by having the foundation come down without quite reaching the bottom-bar, then there is stretching at the top, so that brood is reared there, or else the queen does not use the upper rows of cells at all. With foundation-splints you can have perfect worker-cells from top to bottom, without any danger of buckling, and brood clear up to the top-bar.

Colony from a Tree in Winter.

There was a bee-tree cut down this winter. I took the bees and put them into a hive, and have been feeding them granulated sugar. They are building comb. Would they work without a queen? It was cold weather when I found them, so I didn't try to find the queen. IOWA.

ANSWER. Their building comb is a pretty sure sign they have a queen.

Fastening Foundation in Hoffman Frames without Wiring—Equalizing Brood in Spring—Preventing Foul Brood — When to Put Out Cellared Bees.

1. Is there any way of fastening full sheets of foundation in regular Hoffman brood-frames without wiring them?

2. What is meant by Dr. Miller's foundation-splints? How do you use them?

3. What is the difference between a Langstroth hive and a regular dovetailed hive?

4. Why is an 8-frame hive better for comb honey than a 10-frame?

5. Do you use thin or extra-thin foundation, and full sheets in the section-boxes?

6. What kind of machine would you recommend for one who intends to produce considerable comb honey, to fasten the foundation in the sections?

7. Is it a good policy to equalize brood in the spring?

8. What kind of a wax-press do you use, or would you recommend for one who intends to keep from 60 to 75 colonies?

9. What are the best measures and means to prevent foul brood from breaking out in your colonies?

10. In case foul brood should break out among my bees, or in my neighborhood, could we bee-keepers in southern Minnesota get a foul brood inspector? To whom should we make application?

11. What is the best time in this locality to put out the bees in the spring? MINNESOTA.

ANSWERS.—1. Yes, foundation splints take the place of wiring. With horizontal wiring as generally used, if the foundation comes clear down to the bottom-bar there will be sagging or buckling. Whether the foundation comes clear down or not, there is more or less stretching of the foundation at the upper part of the frame. These cells produced by this stretching will not be used by the queen for worker-brood. If she lays in them at all, she lays drone-eggs. Both these troubles are avoided by using foundation splints.

2. They are merely splints of wood 1-16 of an inch square and ⅛ or ¼ inch shorter than the distance from top to bottom-bar. They are put into hot beeswax until the moisture is fried out of them, and then while barely warm enough for the wax to be melted they are lifted out of the way and pressed into the foundation by means of the wet edge of a thin board. Five splints are put in each frame vertically, one in the middle, one about ½ inch from each end, and another midway between each splint and the middle. For best results they should be given to the bees at a time when honey is coming in freely. Otherwise the bees will gnaw a passage next the bottom-bar.

3. A Langstroth hive is one with frames 17⅝x9⅛. A dovetailed hive is a Langstroth hive with dovetailed or fingered corners.

4. I don't know that it is. At least not always. Perhaps the reason 8-frame hives are so much used is because there is less room in the hive, as bees are more quickly crowded into the super. But unless 2 stories are used before the harvest, there is not a chance to have as strong colonies in 8-frame as in 10-frame hives. There is more danger of the bees starving with 8-frame hives.

5. Full sheets of thin foundation.

6. The Daisy foundation fastener is good.

7. Yes, if rightly done, and no brood taken from any colony unless it has more than 4 frames well filled with brood.

8. I have a German wax-press. I don't know whether anything else may be better for 60 to 75 colonies.

9. Perhaps the most important thing is that the bee-keeper should inform himself as to the disease by reading up in the papers about it, and especially by getting Howard's 25-cent booklet about it. Then he should take the same plans as he would take to prevent the outbreak of smallpox or other contagious diseases, taking pains not to let his bees have any honey that by any possibility could come from a diseased colony.

10. In Minnesota foul-brood inspectors are appointed by State authority, and a letter addressed to the proper officer at the State capitol should bring the desired information as to inspectors.

11. Likely about the time red or soft maples are in bloom, if the weather is favorable.

Outdoor Wintering—Brood in Bee-Tree in February.

1. Can bees be successfully wintered outdoors in Wisconsin, with an outside chaff-hive?

2. Do they need ventilation at the top or bottom? The reason I ask that question is that I have found lots of bee-trees, and some old colonies that had been in the tree from one to 5 years, and the opening was always above the honey and bees. I find from one to 20 every year, and never an old one with the opening below the honey and bees. I would like to hear from others.

3. February 6 I cut a bee-tree and took out 2 pails of honey, all moldy and sour. What few bees there were left had the dysentery. Would they have wintered all right?

4. There was some brood in the comb ready to come out, and fresh eggs, too. I didn't think they had brood this time of the year (February). I would like to hear from others. WISCONSIN.

ANSWERS.—1. Yes.

2. The ventilation may be at the top or at the bottom, or both. When I first kept bees, they were in box-hives, and I wintered them in the cellar with the hives turned upside down, leaving them entirely uncovered. That was abundant top ventilation with no bottom ventilation. At present they are closed at the top, with an opening 12x2 inches at the bottom. I have also wintered them with a small entrance below and a very small opening above. It matters but little where they get the air, so they get it.

3. Doubtful.

4. It is not usual for bees to have brood in the cellar the first week in February, but nothing unusual outdoors.

Sealed Brood in February — Early Queen-Introduction—Two Colonies Together.

1. In looking over the Report of the National I find that you did not give the number of colonies you keep. Please tell us.

2. I was looking at the bees on Feb. 23, and found sealed brood in the hives. Was that a good sign?

3. I have one colony that has a queen that I think is no good. They filled up the brood-nest last summer, but did not work in the sections. They were not strong in bees. I think I will buy a queen soon and introduce her in place of the old one. How early could they ship a queen from the South to the central part of Indiana, and she arrive safely to introduce her?

4. How would it be to lay the cage over the frames for about 24 hours and then shake the bees out in front of the hive and let her run in with them?

5. The sooner I would introduce her in the spring, wouldn't it be the safer for her acceptance?

6. I have been thinking of a way to get 2 colonies to winter and work together the year around, and this is about the way I think I will do it: Take coarse screen wire, just fine enough so that the bees can't go through it, and make a solid screen-wire division-board, and put it in the center of a hive. Then set on another hive fixed the same way. Instead of having the entrance at the end, have 2 entrances, one at one side and one at the other, with the ends closed up. When it comes time to put on sections, put a queen-excluder on top of the 2 bodies and let the 2 colonies work in the sections together. How would that plan work? I may try it sooner or later.

On page 72, under the head of "A Beginner's Questions," I will make question 5 a little plainer. I have an entrance for the weak colony at the back of the hive.

I mean in question 6 that I expect to take the screen-wire from between the 2 colonies, and put in its place a queen-excluder honey-board, shut up the entrance at the back, and make both lots of bees use the same entrance. About what day of the month of March should I unite them?

7. I had the understanding that if they were left together during the honey-flow one of the queens would be killed. If one of them should be killed at that time, which one would it be, the upper one or the lower one?

8. How many trips would a bee have to make after bee-bread to produce one bee?

9. Where do bees have the best pasturage in Indiana, where the ground is level and lots of farming done, or where it is hilly and not much farming? INDIANA.

ANSWERS.—1. Last year I had 129 colonies spring count. Tonk 19,480 sections (4¼x1⅞.)

2. Nothing very bad about it; but you will probably find that the colonies that breed earliest are not always the best.

3. You can probably get one from the South as early as April.

4. It would probably work generally; but a longer confinement would be safer; also it might be better to have the queen farther down toward the entrance. Of course the old queen must be removed.

5. She would probably be accepted more kindly in fruit-bloom than earlier.

6. Probably it doesn't make much difference as to the date; but it might be well not to try the plan with too many colonies, for you may not like it.

7. It might be either, but more likely the weaker one.

8. I don't know.

9. There are good and poor in each.

Clipping Queens — Feeding Sugar-Candy.

1. I am thinking of practising the clipped-queen plan with my bees. I am running for comb honey. I have 14 colonies. Some do not like it because queens get lost and swarms mix up. Is this so, and do you clip? Would you advise me to clip to control swarms? I shall be with them at swarming time. I intend to prevent second swarms.

2. Is granulated sugar, when made into hard candy, good to feed bees in early spring when they are short of stores?

3. Does ¼ part glucose or corn syrup when put into such candy keep it more moist? and is it very harmful to bees in warm weather or early spring? MICHIGAN.

ANSWERS.—1. I have practised clipping for many years, and it would take a lot of money to get me to leave my queens unclipped. It is true that sometimes swarms mix, and so they do with unclipped queens. Sometimes a queen is lost, but that is better than to have both queens and swarm lost.

2. Yes.

3. Don't think of giving bees glucose in any proportion whatever.

T-Supers — Fastening Foundation—Best Section for T-Super.

1. In answer to "Pennsylvania" on page 19, about the T-super, I can not understand if there is anything across the top, or what holds the tins.

2. Will the T-supers fit the standard hive? If not, I could not use them.

3. Please explain how to fasten brood-foundation in both, with wire and splints. Do you let them remain, or remove them?

4. Explain exactly how you put foundation

in sections, and what with. If by a press, what kind?

5. In using bee-way sections, do you put the bee-way at the bottom or at the side?

6. Which is best in standard supers, the bee-way or plain sections? KENTUCKY.

ANSWERS.—1. I think you must have got it into your head that there must be something at the top of the super to support the T-tins, somewhat in the way frames are supported in a hive by the rabbet at the top. There is nothing of the kind. The T-super is the plainest kind of a plain box with nothing about it in the shape of a rabbet; and the T-tins are put inside, at the bottom of the super, and supported there by supports that are nailed on the bottom. Suppose you have your super made—just a plain box without top or bottom. Until the supports are nailed on of course the top and bottom will be the same. With your super lying flat on your bench before you, you will nail on the 1⅛x1 inch piece of sheet-iron flat on the edge of the box, or else drive in the staples and bend them over. Also you will nail your strips of tin (to support the ends of the end-sections) flat on the ends. Now your super is complete, but it is lying upside down. Turn it over, and you will see that the T-tin may rest down in the bottom, and when the sections are put in they will lie clear down flush with the bottom.

2. A T-super will fit on any hive that is flat on top; which is pretty much the same as saying it will fit on any hive. My supers are rather short to fit my hives. I count that an advantage. Sometimes I want the super to be shoved just a trifle forward to allow a ¼-inch space for ventilation at the back end. When I don't want that ventilation I tack on the super at the back end a strip as long as the width of the hive or the super and about ⅞x½. That makes the super long enough so it covers entirely the opening at the top of the hive. The super being made just as wide as the hive, of course it will be wider for a 10-frame hive than for an 8-frame hive.

3. In the private letter accompanying your questions you say you are going to order the book "Forty Lears Among the Bees," Turn to page 87 of that book and you will find very full details as to putting in foundation with splints. The splints are only 1-16 of an inch square, and are left permanently in the frame. If the frames are wired, the wire is left for always. The wires are generally strung through holes in the end-bars, 3 or 4 horizontal wires being used, and the wires are imbedded in the foundation by the use of a wire-imbedder, which costs only a few cents.

4. If you have only a very few sections to fill, you can use a putty-knife to press down the edge of the foundation upon the wood, or you can use a Parker foundation-fastener. Much better, however, is the Daisy foundation-fastener, which does the work faster and with less exertion.

5. The bee-ways are to allow a way for the bees to go up, so they are at the top and bottom of the section.

6. That's a matter of indiivdual preference. Personally, I prefer the bee-way.

Selecting Queen-Cells—Tariff on Honey.

1. I want to save all the queen-cells I cut out during swarming time, that are the largest and best that hatch. What is the best method or system to follow?

Can you tell what kind of a queen a cell will produce by its looks or size? That is, if they are large or small cells, can you tell whether they will be large or small queens? Does the size of the cells have anything to do in telling what a queen will be when hatched? What is the least troublesome or least expensive, or the best regardless of cost?

2. What should we bee-keepers be doing to keep the tariff off on imported honey and wax? It is time we, or our bee-keepers' associations, were doing something.

NEW YORK.

ANSWERS.—1. Your question is not the easiest to answer. If you will pardon me for saying so, your question is somewhat mixed. You say you're going to save *all* cells, and then save the largest and best that *hatch*, which sounds as if you mean to select from among the young queens; but immediately you ask about deciding by the looks of the cells. Well, I'll do the best I can, and if I don't get at what you want I'll be glad to have you ask again. But when the best is done it may not be satisfactory, for athough one may be able to decide something as to the value of a queen or a cell by looking at it, it's hard to tell some one else how to do so.

As a rule, a large cell is better, although sometimes a queen of full size will come from a cell so inconspicuous that it may hardly be noticed as a queen-cell. A long, *slim* cell is generally not desirable. A good cell ought to be covered with deep cuts all over, although there are exceptions. Allow me to say in passing that the largest queens are not always the best. The queen that I think produced more brood than any other queen I ever had was, I think, the smallest.

One way will be to have a nucleus for each cell. But that will oblige you to have a nucleus for even the cells whose occupants you reject. To avoid this you can have the cells hatch out in a nursery of some kind, and give your selected virgins to your nuclei.

2. The way to influence legislation in this regard is to write to your Congressmen. No need to wait for associations to act, for each individual has the right to write. But there is by no means unity of feeling among bee-keepers. Some would rather not have the tariff changed. Certainly those comb-honey producers who buy more wax than they sell would hardly gain by a higher tariff; so you cannot blame them for not being anxious for a higher tariff on wax. As to honey, they will probbly say that imported honey is of the lower grades, and does not come in competition with good comb honey.

Sorting Out Queens of Cross Bees.

I have bees in one of my apiaries that will follow me all about the yard, and will occasionally attack horses that are being worked near by. I don't want to change all the queens in order to get the queens of the cross colonies, but the difficulty is to tell the cross colonies from the others, as they do not seem different with ordinary handling. How would a practical bee-keeper proceed successfully to sort out the objectionable queens so that he could replace them with gentle stock?

COLORADO.

ANSWER.—Not always the easiest thing to spot the cross colony; and sometimes one colony will make so much trouble that it seems the whole apiary is cross. Sometimes if you walk rather briskly close in front of the colonies, the bees of the cross one will dart out at your legs. Or, knock lightly on the hives, and see which one flies out at you.

Partial Clipping of Queens.

1. Would it be possible to "hobble" a queen? That is, to clip her wings so she still could fly, yet not be able to fly high or far? To what extent, and what wings would you clip for such purpose?

2. Do you ever sell any queens? I should like to have a few of your hybrid queens to breed from, even though they be old ones.

ILLINOIS.

ANSWERS.—1. Yes, I think it was Mr. Aspinwall who did that very thing, and if I remember rightly, quite successfully. All four wings should be cut the same length. I'm not sure, but I think Mr. Aspinwall cut off nearly or quite half of the wings.

2. I rear queens only for my own use, but sometimes spare an untested queen of best stock in July.

Depth of T-Supers—Cleaning T-Tins—Fence Separators in T-Supers.

1. I think your super-followers are 4¼ x 5-16 inches, with notches for T-tins. I have some lumber about the right thickness, but a little too narrow for 4¼-inch. Would it be any disadvantage to have them only as wide as the plain-sawed separators, 3⅝, and without notches for T-tins? What would be the disadvantages, if any?

2. How do you get the propolis off T-tins? You probably have a quicker way than I have for cleaning them.

3. What is a good way to clean the plain sawed separators used in T-supers?

4. Did you ever use fences and plain sections in T-supers? If so, how did you like them? I suppose they were the same as are listed in supply-catalogs.

PENNSYLVANIA.

ANSWERS.—1. I'm not sure whether it would make any difference. I don't think it could make any difference at the top; but there might be a little bulging at the bottom, especially if the bees were crowded for room. Possibly, however, that might not happen, for bees are not much inclined to bulge at the outer sides of a super.

2. I made very slow work scraping them; but my assistant found a way that does the business in perhaps a fourth of the time, and does it ever so much better. If you'll keep your eye on the "Sisters'" department I'll get her to tell how she does it.

3. I'm not sure whether there's any better way than to lay a separator on a flat surface and scrape it with a hatchet. But they cost so little that I've thrown away a good many and bought new.

4. Yes, I've used in T-supers, with fences, 4¼ plain sections, and also tall sections, same as in catalogs. I like them as well as in other supers, but prefer the common sections with plain separators.

Average per Colony—Comb vs. Extracted.

If I remember, you reported over 260 pounds of comb honey per colony the past season. Where is the bee-keeper who runs for extracted honey in the same locality, who reported more pounds to the colony? It has been running through my head for years that where the honey is left on the bive until it gets thoroughly ripe there is not as much difference in the yield as some people would try to make us believe. ILLINOIS.

ANSWER.—There's a big mistake somewhere. I don't think I ever averaged 260 pounds to the colony, or even 260 sections. My best year was 1903. In that year, from 124 colonies, spring count, I took 18,150 pounds of comb honey, or an average of a little more than 146 pounds per colony. If 12 sections weighed 11 pounds, that would be nearly 160 sections per colony. It would be interesting to know just how much more I would have taken if I had been running for extracted honey, but I'm afraid I'll never find out. Likely what is true as to the difference with one man or one place would not be true as to another man or another place.

Reports and Experiences

Similar to Spring Dwindling.

IRVING LONG:—I wish to ask your opinion of something about bees. I am always glad to help any one that I can in regard to the many different things that we bee-keepers rub up against, and I am quite sure you are also.

I call myself a beginner in bee-keeping, although I have been making it a close study for 5 years. Perhaps I have passed the beginner's stage, but there are many things that I am unable to decide for myself. The question that I wish to ask you is this:

Every spring I notice that after spring comes and the bees have brood-rearing well advanced, and everything humming to the music of the bee, then comes sometimes what we bee-keepers call "black-berry winter," a cold, wet time that keeps the bees at home to take care of their maturing brood, and brood of all ages—a time that keeps them housed up 2 or 3 days. They will begin to carry out brood.

Is it the natural instinct they have to prepare for hard times by cutting down the mouths to feed? We know a little later in the season under the same conditions they will go to work on the drones. I am unable to decide whether it is this desire to save stores, or whether it is chilled brood. We know that they would be compelled to contract their cluster to keep their brood warm in the center of the brood-nest, and thereby leave brood in the outside combs that would become chilled, and, of course, they would carry that out. If they waited to do that until it warmed up, I would say it was chilled brood, but they commence it about the second day after being housed up. If it is chilled brood, you see it is my fault in not having furnished warm hives, or the entrances should be contracted at such a time. What is your opinion?

These questions properly solved, go to make up our successes. The brood that they carry out is usually of the age when they resemble a young spider—legs, but no wings. But I know you have seen the same thing many a time. H. C. G.

Saline Co., Mo.

ANSWER.—I will gladly answer your questions to the best of my ability. What you speak of is similar to spring dwindling. In fact, spring dwindling is caused probably by the same thing: lack of proper protection in the spring. Some years ago I tried wintering bees in the cellar. I have an average (or better) farm cellar. I found that bees wintered perfectly until March. Then if it came very warm they were uneasy and flew out too much. (The difference in stores was only 5 to 7 pounds of honey from those in the bee-houses.) So I tried taking them out in February and March. Those set out in bee-houses even in February always came along all right, while those set under trees, every every one dwindled badly; even losing their queens.

Bees never destroy worker-brood except in case of actual starvation; but we all know if the flow stops suddenly they throw out the maturing drones, and make way with all young drone-brood. Quite often a warm time comes in March or April when bees expand their brood-nest too much.

There is a very great difference in different strains of bees in this respect. Some will use up all the honey in the hive in early spring in rearing a hive of brood, and then starve to death. Others would need to have the honey uncapped and frames spread, or empty frames put in the middle of the brood-nest.

Another cause of too early brood-rearing is feeding. If bees are in danger of starving, feed. In early spring give them sealed combs if you have them. If you don't have them, feed white sugar syrup, so as not to stimulate them more than you can help.

I want every one of my colonies to have not less than 40 pounds of honey in the fall for wintering. So if I have to feed at all, it is just before harvest of white clover.

Probably in your case if it is not feeding, it is lack of proper protection in the spring. See that the bees are kept just as when wintering, also protect the hive. An old dry-goods box packed around the hive with hay or straw does very well. Give them a south face, or east, with the front of the hive exposed to the weather, and I will venture to say you will never see many worker-bees thrown out chilled in the spring. I never saw over one or two dozen to a colony thrown out here when wintered in a bee-house or shed. IRVING LONG.

Marceline, Mo.

A Season's Experiment with Bees.

There were moved into my neighborhood last season, 12 colonies of black bees. There was a piece of timber land not far from my apiary, but nearer to the black bees. That is, the black bees were between my apiary and the timber (in the year of 1907). At least 70 percent of my queens mated with black drones. At the same time I had another apiary on the other side, but nearer to another body of timber. The percent of mismated queens there was only about 25. In the following spring (1908) the black bees were removed by sale to different places at a distance from here. The mismated queens of the year were only about 20 percent.

This year I will get a chance to try an experiment that I do not think will pay in a financial way. The first part of the year was very wet and in the month of May it turned very dry, so much so that I fear the clover has been badly damaged. It was more dry than it has been for several years past.

Most of the bees that went into winter quarters are old bees that have not done much work to weaken them. Early in the season bees began to fill their hives up, but clover could not stand the dry weather, as all the supporting roots were on top of the ground and failed to secrete any further nectar in the bloom, and I fear a large part of it has been killed. It has been weakened anyway.

There was a light fall flow of honey from asters, and some little brood was reared. The bees that were short in stores were those in the extracting yard, and the ones that had swarmed. There are very few bees that are as strong now as they were last March. Most of the weakest ones were united last fall. Neither clover nor bees are in a condition to stand a hard winter.

I will send a description of how I have transferred quite a number of colonies of bees. I take pieces of pine, or soft timber, as long as the Langstroth frame is high, ¼-inch thick, and saw it in strips 3-16-inch wide. I nail one on each end of the frame, if the comb is in a large piece; more if comb is in small pieces; and on the other side of the frame I nail a like number, or as many as it takes to hold the comb in place on last side. I nail at the top, or to top-bar, but at the bottom I just drive the nail through the piece and turn it lengthwise of the top-bar, so that you can put the comb in place. After the comb is cut into shape, and fitted in the frame, I bring the sticks perpendicular, and drive the nail at the bottom. Comb with brood and honey is easily handled this way. In 4 days the bees will fasten comb in place so that sticks can be taken off unless the colony is very weak, or the weather turns cold.

One-half inch or ⅝-inch wire-nails are best to use. I also forged me a hive-tool made like a claw-hammer. The handle part is flattened at the end, chisel-like, but rounded.
W. A. SWEARINGEN.

Epworth, Ky., Jan. 18.

Bot-Flies and Horses.

I must surely take exception to your article under heading of "Hoodoo Ribbons in Australia" in regard to bot-flies. Here in Western Nebraska, if we drive horses with any satisfaction, we must put cloth of some kind under their jaws (or neck). If you would notice horses here from June 1, or sooner, till cold weather, you would see them actually rear up and strike, the bot-flies are so repugnant. Out in the pastures they will run and throw their heads over the backs of other horses to keep the flies from them. While they don't seem to mind them around their legs any more than a common fly, they will go almost wild if one flies under their jaw. I've killed many a one there, and have seen them stick there till they had their eggs laid. Of course, the eggs don't do any damage, as the horse can't get them in its mouth as they can on their body and legs. I once had a high-bred horse that would rear in the air and groan every time a bot-fly would buzz under his jaw. I have seen men here put red rags under the horse's jaw to keep them off. I don't know if it was efficient or not. I always fasten a cloth of good width from the throat-latch to bridle-bit. Then they can't get in. A. M. BENJAMIN.

McCook, Neb., Jan. 18.

[It is perhaps a reckless thing to have said anything about a subject upon which the bee-books are deplorably silent, and at a time of year when bot-flies themselves can not be called upon to give their evidence. But if there is anything wrong in the case, it is the bot-flies that are to blame. What right have they to do such a foolish thing as to be bothering the throats of horses? The bot-fly (Gasterophilus equi) may be seen very busily engaged in laying its eggs upon the hairs of the horse, in the confident expectation that the horse will bite off and swallow them, to hatch out in the intestines of the horse, the larvæ, or bots, to do their mischief there. Now how could a horse possibly swallow a nit on his throat? To be sure, any one who is at all familiar with horses can hardly have failed to see horses going frantic at times when big flies troubled them about the throat, but is it a certainty that some other fly than the bot-fly is not the culprit? You've seen plenty of the eggs of the bot-fly on a horse's front legs, did you ever see a lot of them on his throat? Did you ever know a bot-fly to bite a horse on the throat or anywhere else? Mind you, this isn't saying that it doesn't, it isn't saying that it doesn't chew great holes in a horse's throat, it's only asking the question. Let us have light on this important matter. It would be a sad thing if any one should fail of a crop of honey through ignorance regarding the bot-fly!

LATER.—Since the foregoing was written, others have written protesting that bot-flies are the miscreants that trouble horses about the throat, sometimes making them rear and strike frantically. Perhaps it will be well to lay the subject on the table for a few weeks, until fly-time, so as to make exact observation whether it be bot-flies or flies of some other kind that are the throat-troublers. At present all the testimony to hand is in that direction, and in case this is corroborated the only thing is to apologize for ignorance, and anathematize the bot-fly for doing such a crazy thing as to lay eggs where they don't stand a ghost of a chance of ever hatching. And then it might be well to transfer the discussion to some equine paper.—EDITOR.]

Wintering Bees in a House.

I am what you might call a "fool" bee-keeper, and in reading the Bee Journal I think there are more of them. I won't say how I manage bees, only that I see so many ways of wintering bees. Now notice this: I winter them in a house made for that purpose. It is 14 feet wide and 20 feet long, matched siding on the outside, sheeting on the inside, filled between with sawdust. There is 6-inch studding and a good, strong roof. The roofing boards are laid close together; floor 2 feet of dry sawdust. Take off the cover from the hive, carry the hive into the house, set it flat on the sawdust, take the honey off from the bees, double an old grain-sack once from the top to bottom, making 4 thicknesses of canvas, spread over the bees, and replace the honey-board on top of the bag. I have 37 colonies and there is not a handful of dead bees. You can see the bees through holes in the old bags.

The house is perfectly dark; 8-foot posts. I don't allow any one to touch the house in any way. I work for surplus honey in supers. I don't think much of having to feed bees. I want but one super of honey from one colony. Don't rob the bees, and you won't have to feed. I don't think there is much made after you have figured the cost of sugar, time, and trouble. I think bees winter better on honey of their own storing.

I like to read the Bee Journal. There are a great many things I don't know anything about, and don't want to.
M. S. CRAWFORD.

Perry, Mich., Feb. 24.

Rather Discouraging.

Since my last letter we have had a very cold spell, but it is warm again, with bees flying. This is a forerunner of a bad spring. It has been that way here for the last two springs, then no honey till in the fall, and I missed it last fall on account of the drouth.
R. B. PERRY.

Greenfield, Tenn., Jan. 26.

Plenty of Rain.

We are still having plenty of rain—nearly 25 inches so far. The soil is thoroughly soaked. We can not tell for certain as to the 1909 honey crop. It takes March and April rains for *that;* then we may have unfavorable weather. M. H. MENDLESON.

Ventura, Calif., Feb. 12.

Very Wet Weather.

Yesterday I found one colony of bees casting out their young drones, and another one hurrying out their workers that could scarcely fly. The walk was full of those that had perished. The weather is very bad so far—very wet. The almonds are in full bloom, but the bees can not get out. A day and a half is the longest sunshine we have had this month.
W. W. COLESTOCK.

Pleasanton, Calif., Feb. 20.

Mildest Winter in Years.

This has been the mildest winter in years, the mercury going below zero only twice during the whole winter, and then for only a short time. While this is so, yet the bees have had no chance for a good flight, that are on their summer stands. Those in the cellar are in fine shape, and were it not too early to "count the chickens," it could be said that the season of 1909 would be one of the best for bees here in central New York. But, alas! the two most trying months for bees are just ahead of us. G. M. DOOLITTLE.

Borodino, N. Y., March 2.

Best He Has Read.

I had discontinued the American Bee Journal for several months in order to test the other bee-periodicals, to find which would do me the most good. I have nothing else that will help me along the line of honey-production, controlling swarming, how to have good, vigorous queens in colonies, besides wintering, and other important things, so much as the American Bee Journal has done in the past year. I can heartily and consistently say that the American Bee Journal is the best periodical on the subject I have read.

Grantsville, Md. L. J. BEACHY.

Look Out for the Skunks.

Do all bee-keepers know that skunks are very destructive to bees, and that quite often "spring dwindling" is caused by these little robbers, perhaps entirely unknown to the bee-keeper?

Their mode of operation is to establish their home in some old abandoned woodchuck's hole, or other hiding place, perhaps only 10 or 20 rods from the apiary, which they then visit nightly until winter sets in, and then whenever the weather is warm throughout the entire winter and spring.

They go to the entrance of a hive and scratch until the bees are disturbed and rush out, then mash them with their paws and eat them by the thousand.

Whether they are attracted by the honey which may be within the bee's body, or that the insect itself is food enough for them, I do not know. Perhaps both, for in summer and fall the skunk lives principally on crickets. Go into any old pasture-lot on a hill, and you may find thousands of stones which have recently been overturned. This is done by skunks in pursuit of the crickets which are hidden under the stones.

If one of these miscreants is living on your bees, as I recently discovered they were on mine. March is a good month to discover and stop the depredation. Whenever there comes a tracking snow, it is easy to follow their tracks to the den, at the mouth of which a small steel-trap will soon end the trouble.

If no such snow appears, a close inspection of the entrances of the hives may disclose the scratch marks, and traps set right there will soon arrest the thief.

These visits have been so frequent among my hives, that I suspect such work may be going on entirely unnoticed in very many apiaries, and I sound this note of warning, for I am convinced that many a good, strong colony may be entirely ruined during the spring months, and the real cause never be known. Isaac F. Tillinghast.

Factoryville, Pa.

Honey Scarce—Carrying Pollen

Here honey is scarce, hardly any on the market, and almost none in the hives. The price on chunk honey is 16 cents. This is a bright, clear honey which never candies. It is sourwood honey.

It is February 22, and bees are carrying in pollen as fast as I can count. This is very unusual for this State, as it generally is winter at this date. My bees will come out weak in numbers, and but little honey. But I am looking to the future with a smiling face.

Geo. F. Jones.

Elkin, N. C.

Bloated Bees.

In answer to an inquiry on page 46, about bloated bees, I will say that I had 2 colonies with this disease last December. I watched these colonies for 3 days, and found every day more bees coming out to die. I cured the bees in 24 hours by feeding diluted *warm* honey in entrance-feeders. The brood in the hives was healthy and the queens laying.

The end of November and December I fed my bees about 23 gallons of old sorghum molasses, at the rate of one gallon of molasses to 3 gallons of water. None but these 2 colonies got sick, and all reared plenty of brood, and are in fine shape today.

Seguin, Tex., Feb. 24. Henry Breuner.

Wants to Produce the Best.

I started 5 years ago with 2 colonies and have 100 now. From 60 colonies last year I got 6,400 pounds of extracted and 1,500 pounds of comb honey, and increased to 100 colonies. I have sold most of my extracted for 12½ cents per pound, and comb at 15 cents, to the consumer. Most of my comb honey has been sold to the groceryman at $3 per case. My aim is to have the best honey that this territory will produce, and I don't have any trouble in disposing of it.

I read all 3 of our valuable bee-papers, and get much valuable information from them.

C. S. Calowell.

Evanston, Ill., Jan. 7.

Good Honey Crop in 1908.

The honey crop of 1908 was good. From 6 colonies, spring count, I took 960 pounds of extracted honey, and 50 pounds of comb honey—total 1010 pounds. I sold the extracted to my customers here at home at 10 cents a pound, they furnishing the receptacles. It was sold before the approach of cold weather. Bees are wintering fine so far on the summer stands in 10-frame hives. That makes 20 frames to the colony almost full of honey.

I have kept bees since 1880, and find it a very profitable side-issue to farming.

J. H. Uphaus.

Greentown, Ind., March 1.

White Clover and Bees All Right.

I have just been out investigating the white clover prospect for the coming season, and I find it very good, both from the seed and layers. The layers are fully as strong as last year, although we may have an ice-storm after this that will injure it, as clover can't stand being smothered with ice, especially seedlings.

It is my opinion that white clover seed that sprouted last fall will produce good blooms full of nectar, if the season's conditions are right, but the layers from last year's plants are more vigorous bloomers, whether from one, 2 or 3 year old plants. I believe that the plants die naturally, only after bearing a seed crop. Then the root dies and the branches take root and go to work on their own hook, and may send out other runners or branches for the next season, thus increasing year after year.

I find that my 14 colonies are all right up to date. They are outside and with little protection, as I could not get enough leaves to pack them as I usually do. They are making long flights today, and get quite a little sap from broken limbs of the hard or sugar maple trees. They are nearly as busy as on a May day.

I am also wintering 14 colonies for a friend, and they are all in fine condition. I hope to bring them all through the winter safely. We are having rather an unusual winter, so that the bees have had several flights. I examined several colonies today, and they are quite heavy, so much so that I will not have to feed any before April.

E. E. Kennicott.

Glenview, Ill., Feb. 21.

Will Try Bees in Tennessee.

I came to this State about a month ago, and I find that the people down here still keep bees in the old-time way, but by the weight of the hives this must be a good country for the bees. I have engaged 40 prime swarms to commence business with, so you see that I will soon be on top again with bees. Having kept bees in old Indiana on a large scale, and having made it pay, I think I can do it here. Anyway, I am going to try it, and if it pays I certainly shall let the "Old Reliable" know about it.

The weather here is rather cold, chilly and damp at present, and I certainly feel the cold worse than I did in old Indiana.

Julius Happel.

Chattanooga, Tenn., Feb. 8.

Bees in a Church.

This is one of the most pleasant churches the writer has ever served. Several of the members and others here keep bees, and this seems to be a good place for them. For 2 years a colony has made its home in the walls of the church, just above the pulpit. So while the "drippings" of the sanctuary have not been visible before last fall, we succeeded in taking about 100 pounds of very nice honey from the colony of bees in the church.

My 4 colonies which I moved from Durham, Iowa, have been wintering nicely, and are very strong. Their hives were full of the nicest kind of honey last fall. I think that bees have been wintering quite well in this locality. (Rev.) J. W. Stine.

Tiffin, Iowa, March 3.

Report for Last Season.

Last year was a somewhat hard one on the average bee-keeper here. I began with 17 colonies in the spring, lost 2 by spring dwindling. I had 7 swarms in May and June. All died from starvation, owing to continual floods and general wet, then a long drouth. About August 2 came a good rain, and oh, how smart-weed (heartsease) and Spanish-needle did bloom! I got 19 swarms, most of which built up well, and all are alive so far. One swarm I caught August 10. It not only built up on 8 Langstroth frames, but gave 18 pounds of surplus honey—a thing I had never before seen. I had only shallow extracting frames, but did not extract. I sold it as chunk honey, as the demand was greater than the supply. I took off and sold about 1,400 pounds, and have about 150 pounds left. Bees are in good shape.

(Dr.) J. T. Blank.

Elk City, Kans., Feb. 26.

A Cheap Bee-Feeder.

Here is a new way to make a bee-feeder, and just as good as any of the high-priced bee-feeders. You can make it yourself by taking a scantling of any kind of wood, 3½x3½ inches, and 6 inches long, or any length you want, by boring 2 rows of 1¼-inch holes 3 inches deep, and place it on top of the brood-nest, with honey or syrup. The bees will come up and carry it down into the cluster in a hurry. Make the syrup warm, or the honey either. Honey needs to be reduced a little with warm water. The space between the holes will prevent the bees from drowning—not a bee will drown. I have made 4 or 5 feeders that hold a quart, and have been feeding my bees all winter, that had but very little honey. Some days it would be pretty cold for them. By making the honey warm they would come up in clusters and work the honey down into the combs below. I see by feeding this way that some of the colonies commenced breeding the first of February.

Seville, N. C., Feb. 22. M. D. Taylor.

Develops the Home Honey-Trade.

In 1908 I started out with 25 colonies, spring count. I increased to 47 colonies, secured 1000 pounds of fine clover and basswood honey, which sold for $3.60 per case of 24 sections. Some of it went to Chicago, but it was principally sold at home. I could not supply the demand. I grade my honey, put it up in nice shape, and it goes off with a rush. I don't have to peddle it, as my customers come and get it by the case. I furnish an attractive case to keep it in. When the case is empty it is returned and another order taken, so you see I have a snap in the honey-business. This honey-business was built up by good management and fair dealing with my customers. No other will pay the progressive bee-keeper. I live in the suburbs of the village. I have near neighbors, but I sweeten them up with honey every year, so I have no complaint—"no kick coming." So in time of peace prepare for war.

I make and use the American hive, 15 inches square, 12 inches high, brood-frames 12½x11½, 9 frames to the hive. For big colonies I use 2 hives. I make everything except the sections. I do this work in the winter-time, and I enjoy it. I have tried other hives, but this one is the best for this locality for comb honey. F. McBride.

McGuffy, Ohio, March 1.

Northern Michigan Convention.

The Northern Michigan Bee-Keepers' Association will met at Traverse City, Mich., April 7 and 8, 1909. A morning, afternoon and evening session will be held the first day of the meeting, and a morning and afternoon session the second day.

Traverse City is the center of a fine bee-location, and is noted for its large attendance at bee-conventions, both the State and Northern Michigan conventions being well attended in the past, when held there, so a large and enthusiastic meeting is anticipated. Do not forget the date, April 7 and 8, next, and invite your bee-keeping neighbors to go along with you.

There will be premiums offered for the best 10 pounds of both comb and extracted honey, also on best 5 pounds of beeswax.

If you have never attended a convention, come out to this meeting, and get acquainted with your neighbor bee-keeper. It is a noted fact, that if a man (or woman, either) attends one convention, there is no trouble in getting them to attend more. The fact is, you could not keep them away after atending one of these meetings. Isn't this convincing evidence of the sterling worth of conventions?

Some of those who will be in attendance at this meeting, are as follows: T. F. Bingham, Geo. H. Kirkpatrick, E. R. Root, Geo. E. Hilton, A. G. Woodman, E. E. Coveyou, S. D. Chapman, J. N. Harris, C. F. Smith, W. Z. Hutchinson, O. H. Townsend, A. H. Guernsey, L. A. Aspinwall, Fred W. Muth, E. M. Hunt, O. Nelson, Chas. Irish, Miss A. H. Rogers, and many others not in this list. You are cordially invited to partake of the bee-keepers' feast at this meeting.

The Convention will be held in the Whiting Hotel, which is on Front St. The Whiting will be our headquarters, they furnishing their parlors free for our convention.

Remus, Mich. E. D. Townsend.

The Successful "Philo System."

The man who wants to have a business of his own that will yield a good living and a profit besides and who is willing to give his time and some hard work to it will find "The Philo System of Progressive Poultry Keeping" an inspiration and a guide.

Mr. E. W. Philo, the author, is a believer in work. He has not attempted to find an easy way to poultry success. But he has outlined in a manner easily understood, a system that any man or woman who is not an invalid can put into practice successfully. The fact that Mr. Philo himself has been successfully raising chickens for more than 30 years places him in a positon to speak with authority.

The Philo System is not a "new idea," nor a fad. Its basis is work, and it attempts not to point out an easy way, but to show the right way. For this reason the inexpert will find this book invaluable. It will start him right, and keep him from getting very far from right. By following the plan given in this book a man may make a net profit of $874.00 or more upon a city lot 50 feet square; besides, he should receive a few hundred dollars for by-products.

On another page of this issue will be found the large advertisement of Mr. Philo. It gives full particulars. When writing be sure to mention the American Bee Journal.

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NOT CHEAP QUEENS, BUT QUEENS CHEAP.

Reared from the best selected red-clover mothers. My queens are all reared by the bees, as they far better understand the job than I. I use no artificial plan. All queens large and well developed, such as will, with proper management, fill an ordinary hive full of eggs and brood in ten days.

Directions for building up weak colonies with my queens, 10c.

Prices of Extra Selected Three-Band Bees and Queens.

Untested queens	1,	$ 75 ;	6,	$ 4.20
Tested "	1,	1.00 ;	6,	5.70
Breeder	1,	5.00 ;	3,	12.00
1-frame nucleus with untested q'n.	1,	1.75 ;	6,	10.20
2-frame nucleus with untested q'n.	1,	2.25 ;	6,	13.20
1-frame nucleus with tested queen.	1,	2.00 ;	6,	11.70
2-frame nucleus with tested queen.	1,	2.50 ;	6,	14.70
Full colonies, untested queen				4.75
Full colonies, tested queen				5.00

Prices of Extra Selected Five Band or Golden Italian Queens.

Untested queens	1,	$ 1.00 ;	6,	$ 5.70
Tested "	1,	1.50 ;	6,	8.70
Breeder	1,	10.00 ;	3,	24.00

If queens are wanted in large quantity, write for price list. 3Atf

W. J. LITTLEFIELD, Little Rock, Ark., Rt 3.

Queens on Approval

If not satisfactory leave in Post-Office for return mail. Orders booked now for May delivery. A very hardy strain of Queens purely mated.

1 Queen	$1.00
6 Queens	5.00
12 Queens	9.00
Two-frame nucleus and Queen	2.00
Full colony and Queen in 8-frame hive	7.00

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A. M. APPLEGATE. Reynoldsville, Pa.

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Has issued an Educational Catalog outlining the "Chantry Methods of Honey-Production," of interest to the expert. The contention is an increase of 25 percent in honey, every section perfect, and no unfinished sections. Several other features. Price, 10 cents. Same to apply on future orders. Early order discounts and premiums. 3Atf

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We wish to announce that we have purchased the A. I. Root Co.'s supply business for Western Pennsylvania from Mr. John N. Prothers, of Dubois, Pa., and are ready to fill orders promptly with a full line of supplies.

ROOT'S GOODS

Always give satisfaction. **Four percent discount in January and three percent discount in February** on cash orders from catalog prices.

Geo. H. Rea has turned his entire bee-business over to us. Can supply you with the very best Italian Bees and Queens. Orders booked now for spring delivery about May 1st:

Every Queen purely mated.

Queens, each $1.00; Dozen	$11.00
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3-fr. " " "	3.50
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Very strong Colony	10.00
Medium Colony	8.00
Good Hybrid Colony	5.00

Bees in 8 or 10 frame hives. Good queen in each. We can supply you with anything in the

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25 " " " " Hybrids

On all cash orders received by March 25, for full colonies.

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If you will make easy monthly payments we will bring you a BIG REGULAR INCOME without any trouble on your part, from

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n the famous **Yakima Valley** in the State of Washington. They pay from $1,000 to $2,500 a year per acre. **You can share in these big profits** without leaving home or friends or your present employment. Our free literature will explain our easy **payment plan.** Write for it today, to our eastern office as follows: 2A3t

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2309 Central Bldg., Rochester, N. Y.

WANTED Bees in any old hives, in large or small lots. Give full details in first letter. Must be bargain.

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FAMOUS
QUEENS

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Having secured the services of an Expert Queen-Breeder, we will furnish you with **Pure Bred Italian Queens** of well-known superior honey-gathering qualities. 900 colonies back of our business. Queens ready about April 10th. Orders booked now.

	Each	Doz.
Select untested	$1.00	$ 9.00
Tested	1.50	11.50
Select tested	2.00	16.00

Special price on large orders. Send for circular. 3A3t

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"Southern Bee Culture"

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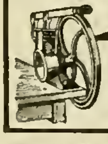

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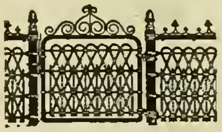

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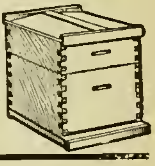

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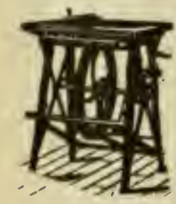

Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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THIS book of over 340 pages tells just how Dr. Miller manages his apiaries to produce the most honey, which, in turn, brings the most money. Dr. Miller has been "at it" some 45 years, and so is competent to tell others the best way to be successful with bees. In 1903 his crop of comb honey was over 18,000 pounds, and he is not located in the best honey-producing part of the United States, either—Northwestern Illinois.

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As we have a good stock of these books on hand, **we can fill all orders by return mail.** This is the time of year to read up on bee-keeping. Better send us your order at once for Dr. Miller's book, and study it carefully so as to make the most of the bee-season. Address,

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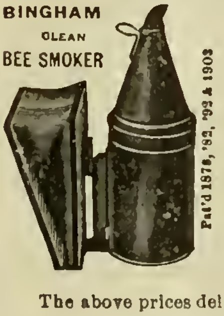
BEE SMOKER



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All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made.........	$1.50—4	inch stove
Doctor—cheapest made to use	1.10—3½	"
Conqueror—right for most apiaries	1.00—3	"
Large—lasts longer than any other...........	.90—2½	"
Little Wonder—as its name implies	.65—2	"

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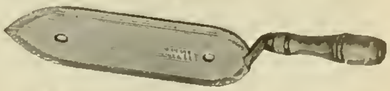

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The 97th edition of our catalog is now ready. If you have not received a copy and are ready to place an order for any supplies write for a copy. Our mailing list has over 400,000 names, so time is required to get the entire edition mailed. We explain this so any one may understand why a catalog may not reach him early.

The A B C of Bee Culture

When we announced the completion of the new edition late in 1907 there was a good deal of satisfaction to notice the big bunch of orders on hand, although we did regret the unavoidable delay in getting the books to some customers who had waited patiently for months. Over two thousand copies of this edition have already been sent out. We believe all urgent orders have been filled. We felt that the change of price to $1.50 postpaid might cause a little slackening in the demand. Not so, however, for in all our experience the orders never came faster.

We have also of the English edition a half leather at $2.00 and full leather at $2.50, postpaid.

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Gleanings in Bee Culture

If you haven't seen a late copy of Gleanings you can't tell from any brief description how really magnificent it is. There are many valuable departments, and our subscribers just at this season of the year are telling how much they appreciate the paper.

Each issue is very fully illustrated. The covers are done by the finest engravers in Chicago, and our writers are the best in the land. Besides dozens of writers of prominence whose names we can't even mention for lack of space, we have such men as Dr. E. F. Phillips, U. S. Dept. of Agriculture; Dr. Edward F. Bigelow, Associate Editor St. Nicholas; F. Dundas Todd, former Editor Photo-Beacon; Allen Latham, Connecticut, etc.

A trial of six months (12 numbers) costs 25c. If in addition to your own subscription you secure others for six months keep 10c on each one for your trouble. A liberal cash commission to those who do canvassing for us.

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For large apiaries, or where the honey comes with a rush and labor is scarce, you should investigate our power machines. A circular of these will be sent on request.

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Choice White Wyandottes

15 eggs, $1.00; 30 eggs, $1.50.

INDIAN RUNNER DUCKS

11 eggs, $1.00; 22 eggs, $1.50.

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in 2-story hives, for extracted honey. Write for prices.

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S. D. Buell, Union City.
NEBRASKA—Collier Bee-Supply Co., Fairbury.
CANADA—N. H. Smith, Tilbury, Ont.
ARIZONA—H. W. Ryder, Phœnix.
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On all Bee-Supplies until May 1. Send for 1909 prices. I can save you big money. 11Atf

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Of the highest quality, a trial order will convince.

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Highest price in cash or supplies. Write for Catalog of full line of our Bee-Keepers' Supplies. Feb. discount, 3 percent.

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At Root's Factory Prices

Notice:-

We have a new stock of goods on hand for 1909 and are able to fill your orders, *without delay*, at factory prices.

SO send a list of the supplies you need, and we will be glad to quote you our best prices.

DO IT NOW and secure our **Special Early-order Discounts.** **If you care** to save on freight charges, send your orders to us. No charges for drayage.

On account of the death of my father, Mr. C. H. W. Weber, it is necessary to make it understood that the business will be conducted the same as usual; there will be no change whatever. Soliciting your patronage, I am,
Yours truly, CHAS. H. WEBER.

C. H. W. WEBER CINCINNATI ...OHIO...
Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

Honey and Beeswax

CHICAGO, Feb. 23.—The trade in honey has not been as active as we had hoped for during the past month, consequently there is quite a heavy stock on sale here at this time, with a tendency to lower prices, as the volume of sales after this month are very light. Taking it all in all the volume of business on the last crop has been disappointing. We quote A No. 1 to fancy at 13c, with anything grading under this at from 1 to 3c less. The amber grades are neglected and sell chiefly at 9 to 10c. White extracted 7 1-2 to 8c. Amber grades 6 1-2 to 7c. Beeswax continues to be in good demand at 30c.
R. A. BURNETT & CO.

BOSTON, March 1.—We quote: Fancy white comb honey, 15c; No. 1, 14c. White extracted in 60-lb. cans, 9c; light amber, 8c. Beeswax, 30c. BLAKE, LEE & CO.

DENVER, Feb. 27.—Strictly No. 1 white comb honey, per case of 24 sections, $3.25; No. 1 light amber, $3.00; No. 2, $2.75. Fancy white extracted, 8 1-3 to 9c; light amber, 7 1-2 to 8 1-3c; strained, 6 3 4c. We pay 24c for average yellow beeswax delivered here. Demand for honey is light, and it seems now as if there will be some carried over.
THE COLO. HONEY PRODUCERS' ASS'N.

TOLEDO, Feb. 25.—The market on comb honey remains about the same as last quotations. Stocks are not moving very rapidly, and owing to some producers who have held their honey since last fall, and pushing it on the market has a tendency to break the prices. Fancy comb, 14 1-2 to 15c; No. 1, 14 to 14 1-2c. Extracted white clover is in fair demand at at 7 to 7 1-2c in cans; alfalfa, 6 to 6 1-2c; amber honey, 6 to 6 1-2c. Beeswax, 26 to 28c.
THE GRIGGS BROS. & NICHOLS CO.

NEW YORK, Feb. 25.—There is very little demand for comb honey. Some calls for No. 1 fancy white, none whatsoever for other grades. There is considerable stock on the market, and it looks now as if some of it would have to be carried over, as low prices do not seem to be any inducement to the buyer. We therefore cannot encourage shipments of comb honey for the present. Extracted honey is in fair demand. Plenty of supply of all kinds excepting white clover. Prices are unchanged. Beeswax, 29 to 30c. HILDRETH & SEGELKEN.

KANSAS CITY, MO., Feb. 20.—Honey market continues in about the same condition as at the time of our last quotations; supply is liberal; demand only fair. We quote No. 1 white comb honey in 24-section cases, $2.65 to $2.75; No. 2 white, $2.40 to $2.50. Extracted, white, per pound, 7½c; extracted, amber, 6 1-2 to 7c. Beeswax, 25 to 28c.
C. C. CLEMONS PROD. CO.

CINCINNATI, Feb. 24.—The market on comb honey is fair, but prices are low. Nothing wanted but fancy goods, off grades are not selling. We are selling fancy comb honey here at 14c. The demand for extracted honey is fair, amber in barrels is selling at 6¼ and 6 1-2c; in cans at 7 and 7 1-2c; sage honey at 9c. Beeswax slow at 32c. C. H. W. WEBER.

INDIANAPOLIS, Feb. 24.—There is a good demand for best grades of honey, but comb honey is now becoming very scarce and jobbers are obliged to refuse orders because producers seem to be sold out entirely. Fancy white comb would bring 12½c per pound. No. 1 white 12c. Amber comb honey is in poor demand, with no established prices. Some white clover extracted is being shipped to this market and producers are receiving 7 to 7½c. Beeswax is in good demand at 29c cash or 31c in exchange for merchandise. WALTER S. POUDER.

ZANESVILLE, OHIO, Feb. 25.—There is no material change in the market conditions since last report. There is a good demand for honey to be shipped to outside points, but the demand is rather slack in this immediate vicinity. The general trade revival which seems to be at hand may stimulate the honey-trade to some extent. Not much honey, especially comb, is being offered. No. 1 to fancy white clover comb would bring on arrival 13 to 14c, and wholesales at 15½ to 16½c. Beeswax, on arrival, 30c cash, or 31c in exchange for merchandise. EDMUND W. PEIRCE.

HONEY

for sale, 50 cases Amber, Buckwheat and No. 2 white, $2.50 per case, in 6-case lots at $2 25, or the 50 cases to one person at $2, 24-sect. to case; nice, thick, well-ripened amber at 7 1-2c, two 60-pound cans to case. QUIRIN'S famous strain of Bees and Queens for sale in season.

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We will Buy and Sell

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of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.

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at highest market prices.

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Send for our prices on Extracted White Clover and Amber Fall honey.

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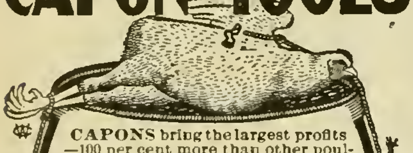

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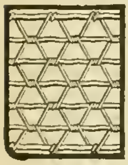

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Bee-Supplies for Season of 1909

Complete stock on hand, as our plant has been running steadily so as to take care of the demand for **Bee-Supplies** the early part of the coming season. We are practically overstocked at this time and advise those in need of **Bee-Supplies** to order now (shipments may be delayed until you want the goods) before the contemplated advance in prices all along the line. Lumber is dearer and labor has never been so high, but we agree to protect our patrons at present prices upon receipt of their orders at this time.

It will cost you only one cent for a postal card to get our **delivered prices on Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Foundation, Smokers, Extractors, Shipping-cases, etc.** It may mean a saving to you of many dollars. It is the natural advantage we have over others that enables us to make you the Best Price. There are no better goods than ours, and we GUARANTEE SATISFACTION or REFUND your MONEY.

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No. 4

April, 1909

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THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
118 W. Jackson Blvd., Chicago, Ill.

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1st.—To promote the interests of its members.

2d.—To protect and defend its members in their lawful rights.

3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

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$4.00 for 6 queens; $2.10 for 3; or 75c for

A Standard-Bred Italian Queen-Bee

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Nemaha, Co., Kan., July 15, 1905.

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GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best. She keeps 9½ Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
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Marion Co., Ill., July 13.

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Lewis Bee-ware Shipped Promptly

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Dittmer's Process is Dittmer's

It has built its Reputation and established its Merits, on its own Foundation and its own Name.

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Money-Saving Prices on Bee-Supplies

If you will send me list of goods wanted. No harm done if prices don't suit. I buy in car-load lots and sell in any quantity. I believe I have the largest and most complete stock in Illinois, if not in the West. A trial order or a visit here will convince any one. Eggs of B. P. Rock, White Wyandotte, Brown Leghorn—at $1.00 per 16. Cat. free. Bees for sale. Correspondence solicited.

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Wanted Man to assist in small apiary near Littleton, New Hampshire, and to work in garden. Must be clean and good tempered, good character and habits, and have had experience with bees. State experience, references, and amount wages required. Address,
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A New York customer writes, "I have tried queens from a good many breeders, but yours are far ahead of them all." 4A4t

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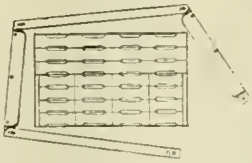

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We offer for delivery any time after April 15, full colonies of Italian Bees, in 8-frame hives, at $7.00 per colony, including queen; or in lots of 5 or more colonies, at $6.50 each.

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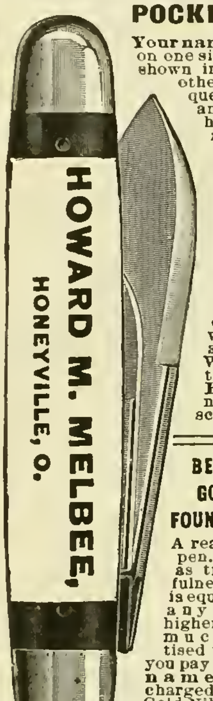

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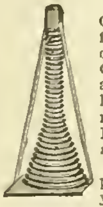

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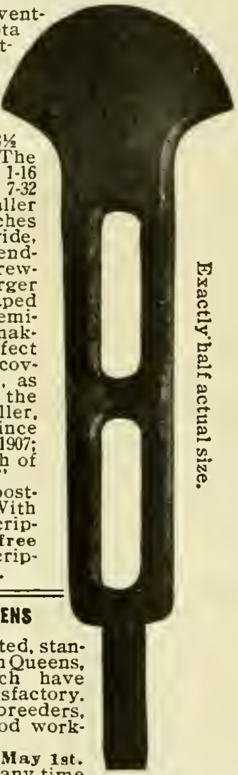

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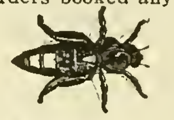

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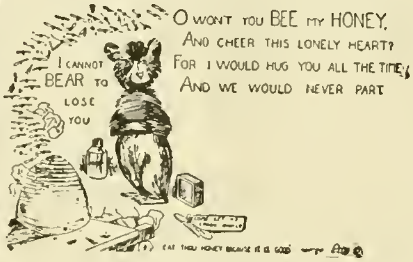
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L.L. LANGSTROTH
CHAS. DADANT

AMERICAN BEE JOURNAL

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GEORGE W. YORK, Editor CHICAGO, ILL., APRIL, 1909 Vol. XLIX—No. 4

Editorial Notes and Comments

Rendering Wax in an Oven

Very commonly there are more ways than one of doing a thing, and one of the ways may be bad while another good. In that excellent work, "Wax Craft," the author very properly says that extracting wax in an oven can not be recommended, because of too great heat, as the temperature should in no case exceed 172 degrees. Evidently he has in mind that the oven door will be closed, and one can readily see the great danger of going beyond 172. But there is another way of extracting in an oven that may be commended to those who have only a small quantity to render, as follows:

Take a dripping-pan with one corner split open; put it in the oven with the split corner projecting out so that the melted wax as it drips from the open corner may fall into a dish set beneath to catch it. Something must be put under the inside to raise it, so the melted wax shall flow outward. As wax melts at 143 degrees, it runs out before any danger of reaching 172 degrees, thus doing away with Mr. Cowan's objection.

For cappings and bur-combs the oven serves a good purpose, but, like the solar extractor, leaves in old combs some wax that can be got out by a press.

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Our Question-Box and Its Limitation.

The many expressions of appreciation of the question-box leave no doubt as to its serving well the purpose for which it is intended. Occasionally, however, some one expresses disappointment because he has watched in vain for the clearing up of some point upon which he is in doubt. He seems to have some vague idea that the question-box is intended to give light upon all knotty points, whether any question is asked about them or not. He ought hardly to expect a question to be answered that is not asked, and he may wait a long time before some one else asks the particular question he desires answered. "If you don't see what you want, ask for it."

Every subscriber to the American Bee Journal is at liberty to make use of the question-box without any charge whatever. But there is one limitation. The question-box is not intended to take the place of a bee-book, or book of instruction, only to supplement it. Suppose John Smith says, "Does the old queen or the young one go with the swarm?" "How do you transfer a colony from a box-hive?" with a number of other questions equally elementary. If any of his questions are cut out, and he is told that they are answered in the bee-books, he feels aggrieved, and says, "I pay my subscription in full and am entitled to answers to any questions I may ask. I don't propose to be held up and forced to pay out extra money for a bee-book." But suppose his questions are all fully answered. A year or so later he finds the same questions are repeatedly asked by other beginners, and John Smith is likely to say: "What is the sense of having space taken up each month with questions that have been asked over and over again? I pay for my paper, and would like to get something for my money."

There are certain things that every beginner is likely to want to know—must know, if he would be successful—and a bee-book is written for the express purpose of telling him these things. If John Smith, when he first becomes a subscriber, should object to what he calls being forced into buying a book, he might be answered, "It would be hard to do you a greater favor than to get you to procure such a book, for in it you will find answered the greater number of questions that you will want to ask, and a good many others that you ought to ask but will not think of asking. Then there will be other questions that will occur to you that are not answered in the book, and such questions will always be welcomed by the question-box. It would not be a difficult task to occupy space in each number with questions that are answered in every book of instruction upon bee-keeping; but it is for your future protection against space being thus wasted that you are now urged to inform yourself on these elementary points through the study of some one of the books."

◆

Washing Honey-Cans

Allen Latham, in Gleanings, protests vigorously against putting honey in new cans first without washing the cans, saying:

> These cans are made by men the vast majority of whom chew tobacco. These cans have all their seams wiped with a vile brush wet with a solution of zinc chloride (a poisonous salt.) They are all made from tin which, though for the most part largely handled by machinery, is frequently touched by men with grimy hands—hands befouled wth dirt distasteful to eye and taste. With all justice to these workers, does Mr. Burnett think that one of them would wash off the spot if he by chance spat tobacco juice upon the inner surface of a tin can, when that inner surface was only the side of a sheet of tin?

When a can is emptied, he thinks it should be thoroughly washed, so that no daub of honey left may injure the can. Editor Root thinks that while this may be true for climates like that of Mr. Latham, near the sea-shore, for inland localities the case may be different.

Mr. Latham says a honey-can should be entirely filled with honey, for if any air-space is present it will injure the honey if left till the next summer.

◆

"Wax Craft"—A Unique Book

Mr. T. W. Cowan has again done a service to bee-keeping by writing a book telling "all about beeswax, its history, production, adulteration, and commercial value." The book, entitled "Wax Craft," contains 172 pages, 7 by 5 inches, with clear, open print; with 17 full-page plates, each plate having one to 4 illustrations.

The first chapter, "Historical," contains much that is novel to the average bee-keeper, and interesting as well. Perhaps every one is familiar with the use of wax in modeling, but not every one knows that at one time it played an important part in painting.

Beeswax lent its aid to magic and enchantment. When young folks tire of telling fortunes by the grounds in a teacup, they might return to the former use of wax. "Divination by dropping molten wax into water was in ancient times called 'ceromancy,' the various shapes assumed by the dropping of the liquid wax as it fell upon the surface of the cold water and became solid determining whether the omen was to be a happy or unhappy one."

In some countries "a lighted wax candle placed in a basket was floated on the water near to the spot where the body of a drowned person was supposed to lie, it being believed that the candle would remain stationary over the corpse."

"In Germany and other countries the shape of that portion of the body of persons affected by disease was molded in wax and placed in the church with the conviction that in this way recovery would be ensured."

As to one mooted point, Mr. Cowan says: "Wax cannot be produced at all times, but its secretion is voluntary, and for its production a temperature of from 87 degrees to 98 degrees Fahr. is required."

Mr. Cowan says sulphur fumes destroy the eggs and larvæ of the bee-moth. In this country it is pretty generally understood that sulphur fumes have little or no effect upon the eggs, bisulphide of carbon being much more effective.

Here is a paragraph taken from the chapter on wax rendering, page 56, that is packed very full of information:

> The melting of combs can be done either by the heat of the sun's rays, or with boiling water, or by steam. But only rain or river water is suitable for the purpose, and no other should be used, seeing that well water, if hard, is liable to cause wax to turn brown in color. Lime in water also unites wth the fatty acid of wax, saponifying it, so that, after cooling, wax rendered with hard water has on the under side a spongy, greyish mass. When rain or river water is not available, vinegar or a small quantity of sulphuric acid should be put into the water, just sufficient to neutralize the time. Copper vessels are preferable, but if not available, iron ones can be used, but they should be first heated and rubbed with a piece of mutton-fat, which not only prevents the acid from attacking the iron, but the latter will not afterwards discolor the wax. It should also be noted that the nearer to the melting point at which all melting operations are performed the finer will be the product, a high temperature destroying both the color and aroma of the wax produced."

The last chapter of the book contains 110 recipes in which wax is used, followed by a very full index.

To any one who desires to make his apicultural library more nearly complete by adding to it a monograph on this practical subject, "Wax Craft" is heartily commended. It is mailed for $1.00 in this country.

Equalizing Colonies

The beginner who has been told that it is a good thing in spring to equalize colonies may do a lot of harm by it. Suppose he has a colony that has 4 frames of brood, and 2 others with one frame each. He takes 2 frames of brood from the strongest colony, and gives one of them to each of the others. Now they are equalized, each of the 3 colonies having 2 frames of brood each. The 2 weaker colonies will be benefited, but the combined benefit to the two will be overbalanced by the harm done to the stronger colony.

So long as no colony has more than 4 frames of brood, no equalizing should be done. When a colony has 5 or more frames of brood, all but 4 may be taken away. Then give a frame of the removed brood to each colony that has 3 frames of brood, letting the weaker ones wait. When there are no colonies with 3 frames of brood, then give 1 or 2 frames of brood to each colony that has frames of brood. When there are no longer any stronger ones to help, then give one, 2, or 3 frames to the weakest.

Nothing has been said about giving bees with the brood, but that is a matter of the first importance. Also there may be big mischief done if bees are not given in the right way. Give a frame of brood without any bees, to a colony having already as much brood as its bees can cover, and it means merely the loss of so much brood. Take from a strong colony 3 frames of brood with adhering bees, and give it to a weakling having only one or 2 frames of brood, and it's pretty sure guess that the queen of the weakling will be killed.

So the adhering bees must be given with the brood, and too great a proportion of strange bees must not be given at a time. If a colony has 3 frames of brood, it is safe to give another with adhering bees, without any precaution. Even with 2 frames of brood it may be safe to give an additional frame of brood. After a day or two, another frame of brood may be given without endangering the queen.

If queenless bees are given with the brood, then there is little danger of the queen being hurt, no matter how many frames of brood with adhering bees are given. In an apiary of considerable size, brood with adhering bees may be taken from all the strong colonies (of course it goes without saying that care must be taken not to take the queen with the bees), leaving at least 4 frames of brood in each strong colony, and all the brood and bees thus taken may be put in a hive on a new stand, if necessary piling up 2, 3, or more stories high. Although some bees will return to their old homes, plenty will remain to take good care of the brood. A day or more later these frames of brood and bees may be distributed wherever needed; and being queenless they will not endanger the queen, no matter if given to the weakest colonies. Besides, fewer of them will return than would if they were queenright bees.

There is, however, a way of strengthening with brood without any bees, although more troublesome. Exchange a frame of brood in a strong colony for one in a weakling, giving the weakling a frame of sealed brood for one that is mostly unsealed, and the weakling is strengthened. This suggests that in all cases of taking brood from strong colonies to help the weak, it may be well to select the ripest brood.

Getting Good Queen-Cells

Homer W. Burke gives the following plan for securing good queen-cells of best stock, in the Canadian Bee Journal:

> During a honey-flow go to a colony that has proven to be one of the best in the yard and remove a frame out of the center and replace it with a frame with only a starter in, say about 2 inches deep. Leave this starter in for 2 or 3 days until the queen has started laying nicely in it. Now remove this frame and put it in the center of a colony that is preparing to swarm, as they can generally be found at this time of year; or even better would be if you had a colony that is superseding their queen, and remove one of the center frames from it, also cutting out all queen-cells that may be started in any part of the hive. Now take this frame with the eggs in it from your best queen, being sure to trim the bottom off first, so as to have eggs in the bottom row of cells, then place in the hive. In 10 days you will have a fine row of perfect queen-cells on the bottom of this frame, as it seems to be a very convenient place for them to build.
>
> The reason I like this way of rearing my own queens is because they are from the eggs of the best queen in the yard, and naturally we improve our strain of bees. Also the bees that build those cells are not made queenless and compelled to rear a queen, and therefore they take their time in building those cells, and we are sure of having good queens.

This is the plan given in Dr. Miller's "Forty Years Among the Bees," page 239, with modifications. The average bee-keeper is likely to be frightened out of trying to get cells reared from best stock because he thinks it must be by means of artificial cell-cups. Whether he is mistaken as to the difficulties or not, he may feel assured that by this plan he will get the very best of cells, and there is nothing but what may be easily done by the veriest beginner. The modifications, however, are to be avoided rather than commended.

Mr. Burke, so far as one may judge from what he says, has his best queen in a full colony. Dr. Miller keeps his in a nucleus. One reason for this is that when a queen has thoroughly established her reputation, one desires her to live as long as possible, and keeping her in a nucleus may prolong her life a year or more. Another reason is that in a full colony, when a frame with a small starter is given, the likelihood is that the bees will build only drone-comb below the starter. In a nucleus they will build only worker-comb. If the frame be given to a full colony, it should be nearly filled with worker foundation. Even then, if a full flow is on, it may happen that the frame will be filled with honey and not an egg laid in it.

Mr. Burke gives the comb upon which cells are to be started to a colony inclined to swarm or to supersede its queen, but leaves the queen. Dr. Miller gives the comb to a queenless colony. That does not seem very much of a difference, but sometimes a very small matter makes all the difference between success and failure. When a colony becomes queenless, the bees will start one or several queen-cells, using for each of these a worker-cell containing an egg or a larva—generally a larva. Such a cell is called a post-constructed cell, to distinguish it from a pre-constructed cell, such as the bees build when preparing for swarming, the cell being started as a queen-cell and the egg put into it afterward.

Now the important point to note is that when a laying queen is present in a hive, any queen-cell started will be a pre-constructed one, whether intended for swarming or supersedure. That is, the cell-cup will be first built, and the egg put into it afterward. So when Mr. Burke gave a colony brood from his best queen from which to have cells started, leaving the queen in the hive in which such brood was placed, *he never got a single cell tenanted with an egg or larva of his best stock, but always from the queen present in the hive.* Whether queens so reared were good or not, depended not upon the character of his best queen, but upon the character of the queen present in the colony which started the cells.

It is true that when a freshly built comb is put in the center of a queenless colony, the bees are left at liberty to start cells on any of the other combs. But the bee-keeper is equally at liberty to reject all but the cells reared on the one comb of the best stock. The comforting fact remains, however, that very few, if any, cells will be reared on any but the one comb that is given. There are two reasons, probably, for this: The bees prefer the soft, freshly built comb; and they also prefer to build cells on the edge of a comb where there is so much room.

So if the beginner would succeed in getting queen-cells of the best stock, let him look out for two things; let him have his best queen in a nucleus—even if only temporarily—and let him remove the queen from the hive in which he desires to have the cells started. Of course, the latter queen may be returned in 10 days, or sooner if the frame of cells is put in an upper story over an excluder to be completed.

Miscellaneous News-Items

The Editor's Silver (25th) Anniversary

Yes, it was just 25 years on March 31st, that we arrived in the office of the American Bee Journal. That is a long time, and many changes have taken place during the passing years since 1884.

We had met Mr. Thos. G. Newman, the then editor, when he visited his nephew, Mr. Benj. Harding, who was our good friend at Kent, Ohio. An agreement was entered into at that time between Mr. Newman and us. We were to devote our time to the business of both Mr. Newman and his son, Alfred H., the former running the American Bee Journal and the latter the bee-supply business. In fact, we had "two bosses" for 6 or 7 years. But the experience we gained in both lines of work was invaluable in view of our subsequent business life.

In May, 1892, we bought the American Bee Journal, going into debt for about two-thirds of the purchase price. We thought we had put in pretty hard licks, but during the 6 years following, we certainly did do some hustling, in order to clear up the indebtedness. Then following those 6 years, in addition to editing and publishing the American Bee Journal, we also managed a large bee-supply and honey business, until 5 years ago last October. For several years we were perhaps the largest bottler of honey in this country. But the load we were carrying was too heavy for us physically, and so preferring to live a few years longer, we disposed of the bee-supply business in September, 1903, and since then have devoted most of our time to the American Bee Journal.

Next year—1910—will be the American Bee Journal's "Jubilee Year"—50 years since it was founded by Samuel Wagner, in Washington, D. C. After conducting it a few years he died, when it passed into the hands of Rev. W. F. Clarke and others, the former editing it for a year or two. Thos. G. Newman then purchased it (in 1873), and until May, 1892, was its busy editor and publisher.

So we have been connected with the American Bee Journal a trifle over half of its life, and have edited and published it for just about one-third of its existence.

In 1881 the Bee Journal was changed from a monthly at $2.00 a year to a weekly at the same price. In July, 1885, the price was put at $1.00 a year, and so continued till July, 1907, when it was changed back to a monthly publication. Today the price is only 75 cents a year, while it contains about twice the amount of reading matter in its regular 32-page issue that it had when it was a monthly at $2.00 a year. And there are many who think that today the American Bee Journal is a better bee-paper than ever. It has a larger number of subscribers than it has had at any time during its history. But *we* think it ought to have several times its present number of subscribers.

The years are rapidly passing. So many of the old friends of the American Bee Journal have gone to their reward, and so many others are fast approaching the time when the last farewells must be said. We have met and become acquainted with a large number of bee-keepers during the 25 years of our connection with the American Bee Journal, most of whom we feel that we can count as real friends. To possess their friendship and regard is to be rich in what is of most value in life. It were discouraging and almost hopeless if it were not for the inspiring friendships of earth—if it were not for the loyal and true spirits that one meets and holds close to his heart as the years come and go. After all, unless one is faithful, and tries to do his best, even if not financially well rewarded, there isn't much else to strive for on earth. The greatest satisfaction comes from having made a sincere effort to be helpful to others, to be loyal to the highest and the best, and to be faithful and true to those who have shared in life's struggles and conquests. The end comes all too soon to most of earth's toilers, so that it would seem that the few short years may well be spent in doing one's

1884 GEORGE W. YORK, 1909
Editor American Bee Journal.

best to make life's pathway a little smoother and a little less irksome to those who are going the same way. When all is said, and all is done, the final verdict, "Well done, thou good and faithful servant, enter thou into the joys of thy Lord," if it can be truly said, will be reward enough for having striven to live well, even if there were nothing promised beyond that.

So at the threshold of another 25 years we will take a new grip upon the apiarian and other duties and problems that confront us, and go forward to meet them, and to perform them, with the spirit of the conqueror who, though sometimes defeated, is not cast down, and who from every contest receives a new impetus to strive to render a nobler and a better service to mankind.

A Call from Mr. E. F. Atwater

Idaho has large possibilities as a bee-keeping State. Mr. E. F. Atwater, who has about 700 colonies there, gave us a very pleasant call recently. He is one of the hustling young bee-keepers of that part of the country, and has also written occasionally for the bee-papers. He is very pleasant to meet, and, nothing preventing, he will easily find his place among the leaders who specialize in bee-keeping.

Another 48-Page Number

This number of the American Bee Journal is another one having 16 extra pages. We had such an accumulation of good reading matter that we just had to use the extra space in order to keep up with the incoming contributions. We trust that our readers will not object to the extra number of pages again. On the contrary, we feel sure they will appreciate it so much that many of them will try to get their neighbor bee-keepers to become subscribers. We wish they would do this. We always have room for more subscribers. There are just thousands upon thousands of bee-keepers who need the kind of help that the old American Bee Journal can give them.

Getting Honey While Curing Foul Brood

Some of our Western friends manage to secure good crops of honey while curing foul brood. E. F. Atwater thus tells about one case of more than a hundred colonies, in Gleanings in Bee Culture:

> Last April, in inspecting our McDonald yard of 140 colonies, we found perhaps half of them affected with foul brood. With a view to circumvent robbers while working with the bees, we at once constructed a tent to use in our work at this yard. When the flow arrived, early in June, with three helpers I went to this yard, and in about twelve hours we shook almost every colony into a clean hive, supplied with wired frames and full sheets of foundation, and clipped every queen to prevent absconding. About 25 of the weaker colonies were taken a few rods away, to the north part of the yard, all their queens caged, and the brood from the shaken colonies was piled up on them to hatch, and all entrances well contracted. When shaking, all combs with little or no brood were put in hive-bodies, and stacked up bee-tight in the shop. Then in ten days to three weeks, as we had time, we shook the stacked-up colonies at the north end of the yard. As some colonies were weak at the time of shaking, we made only 100 good colonies from the original 140. As we wished honey rather than bees from this yard, we preferred to make our increase at other yards which are free from disease. When fall came, the bees were again inspected and all found clean except seven colonies, which, as bees are cheap here, were sulphured and hauled home. The 93 colonies gave as large a crop per colony as was taken from yards not diseased.

Curing Foul Brood in the Fall

The proper time to treat foul brood is when bees are gathering. Sometimes, however, it happens that a case has been unavoidably left without treatment, and according to J. L. Byer, in the Canadian Bee Journal, Jacob Alpaugh has been quite successful with fall treatment. He says:

> Briefly stated, the infected colonies are left till October, when the brood-rearing has ceased, and then the bees are shaken on empty frames and left that way for 2 days. At the end of that time full sheets of foundation are given, feeders put on and the bees fed as rapidly as possible. Last fall a friend of mine well known to a good many members of our Association had a number of colonies slightly affected with foul brood, and he decided to try this treatment, as circumstances kept him from attending to them earlier in the season. The result was an unqualified success, and my friend said he would not have believed that it was possible for the bees to draw out the foundation as quickly as they did. Certainly the 2 days' starving did not appear to hurt the bees any, and as they appeared after treatment clustered on the beautiful new combs I would not pay 2 cents to insure their wintering.

Death of Editor W. Broughton Carr

Mr. W. Broughton Carr, for many years editor of the British Bee Journal and of the Bee-Keepers' Record in conjunction with Mr. Thos. W. Cowan, died Feb. 11, 1909, at the age of 73 years. The initials of his name are very familiar in connection with the "W. B. C." hive of his invention. He was a man greatly beloved, and his death is a serious loss to British bee-keeping.

"Forty Years Among the Bees"

F. Dundas Todd, ex-editor of the Photo Beacon, while criticising some of the illustrations in Dr. Miller's "Forty Years Among the Bees," has this good word for the book itself, in Gleanings in Bee Culture:

> Again, there is that Nestor of bee-keeping, Dr. Miller, whose "Forty Years Among the Bees" is in my hands every day from March to September, for the very simple reason it comes nearer being specific in the details I want to know than any other book on bee-keeping.
>
> I like the doctor's book just because he goes so thoroughly into the details of his practice, and in many ways I am endeavoring to follow him. He is the only writer who goes minutely into hive-construction, so far as I know, and I want to say that this past season I would have been in a pretty fix if I had not had his "Forty Years Among the Bees," as I am so far from supplies, and was compelled to make my own hives. It can, therefore, be readily understood how much I had to rely upon books.

A Book About Honey

There are books galore about how to manage bees, there are books devoted solely to queen-rearing, and books devoted to other branches of bee-keeping, to help the man who is trying to make a gain by selling honey, but here is a book about honey itself. Alas for the majority of bee-keepers in this country that it is written in the German language. Yet that will make it all the more valuable to German bee-keepers in this country who still maintain a love for the mother-tongue.

"Der Bienenhonig und seine Ersatzmittel" is written by Dr. Alfred Hasterlik, contains 232 pages, and has 3 illustrations. Beginning at the beginning, we are told how the bee gets the nectar and what it does with it, including an analysis of nectar; then through the chemistry of honey, its harvesting, testing, adulteration, etc., up to its marketing. There are also given pharmaceutical preparations in which honey is employed, and this for several different countries, and a string of recipes for honey-cakes, etc. One is just a bit surprised to find that this list of recipes is hardly so full as that contained in the booklet "Honey as a Health Food," that has had so large a circulation in this country, seeing that honey is so much used in home-cooking in Germany.

It is interesting to note how American honeys are rated. Northern white clover honey holds the first rank, with the Florida mangrove a close second; then comes Cuban bellflower, and then linden.

Much honey is imported into Germany. In the 10 years from 1897 to 1906 inclusive, more than 860 tons were imported from California. That seems like a lot of honey. Mexico, however, furnished more than 3 times as much; Cuba 11 times as much; and Chile and Peru 20 times as much.

Illinois Bee-Keepers, Beware!

We have received the following from Jas. A. Stone, a member of the Legislative Committee, of the Illinois State Bee-Keepers' Association, which will be of interest to every honorable bee-keeper of Illinois:

> When our committee came before the committee in the Illinois Senate, we were asked why some of the bee-keepers opposed the Foul Brood Bill; and, from what we were able to figure out, there are two bee-keepers making objections—one from the north part of the State, and one from south part. We are sure we are "onto" both of them. Both have foul brood among their bees, and the disease has been known to go with queens sold from one of them—if not from both. We placed the facts before the committee—showing what a pity it would be not to prevent such men from spreading the disease broadcast over the State.
>
> It now behooves bee-keepers everywhere in Illinois to see that we get a law to protect us from these men whom we cannot call honest, for no man will fear an honest law, if he himself be honest. Let all bee-keepers see their representatives and warn them against these Shylocks. JAS. A. STONE,
>
> Springfield, Ill. *Mem. Legislative Com.*

What a shame it is that just a few obstinate bee-keepers in a whole State should be listened to at all by any members of the legislature of Illinois in a matter that practically all of the bee-keepers are in favor of, and know they ought to have! Especially is this true, when the States surrounding Illinois are securing good bee-disease laws. See what Indiana, on the East, has done recently; and Wisconsin, on the North, has had a good bee-disease law for years. Shall Illinois continue to remain in the rear in this matter, just because two or three of her bee-keepers do not agree with all the rest of the State? It is high time that this much-needed law is enacted, for it is for the protection of all honest and sensible bee-keepers, from those who would harbor in their own apiaries, or spread broadcast, bee-diseases, which, if not cured or restrained, would soon wipe out the whole bee-business of the State.

Let all bee-keepers in Illinois come to the defense of the bee and honey business and urge their members of the legislature to *vote for* the bee-disease Bill. Don't delay in this matter, but act *at once*.

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To New Jersey Bee-Keepers

We have received the following letter from Albert G. Hann, Secretary of the New Jersey State Bee-Keepers' Association, who wishes again to ask the cooperation of all New Jersey bee-keepers in the effort now being made to secure the bee-disease law:

> Our foul brood Bill has been introduced into the Senate by Senator Gebhardt, of Hunterdon County, and is now in the hands of the Committee on Agriculture, of which Senator George W. F. Gaunt is chairman. It is now up to the bee-keepers of the State to make their needs known to their law-makers. Let each interested bee-keeper write at once to the assemblymen and senator from his county, urging them to support this Bill. Also write to Senator Gaunt, asking him and other members of the Committee to get the Bill before the Senate.
>
> All legislators may be addressed at the State House, Trenton, N. J.
>
> What we do must be done *now*, for the legislature will adjourn before many weeks.
>
> ALBERT J. HANN.
>
> Pittstown, N. J., March 23.

◆

Morley Pettit, Ontario's Provincial Apiarist

Upon the recommendation of the Honorable, the Minister of Agriculture, the Committee of Council advise that Morley Pettit of Aylmer, Ontario, be appointed Provincial Apiarist, his duties to include:

1. The conduct of experiments in Apiculture at the fruit Experiment Station, Jordan Harbor, Ont.
2. The Inspection of Apiaries under the Foul Brood Act; and
3. Lecture work at the Ontario Agriculture College—said appointment to take effect on and from the first day of April, 1909.

This may be a surprise to many, in view of the fact that Mr. Pettit yielded to the call to preach the gospel a couple of years ago. But he left the regular ministry more than six months ago for reasons that were considered good and sufficient to himself, and while wondering what he would do next, the offer of the position of Provincial Apiarist for Ontario came to him quite unsolicited. The wide opportunities it will give for a practical demonstration of Christianity in everyday business and professional life appealed strongly to Mr. Pettit. It really seemed to him that it was a direct answer to prayer.

The field of practical experiments in apiculture has been very little touched upon under Government auspices in Canada, although great progress has been made by private enterprise and at private expense. If all the money that has been lost could be reclaimed, it would equip several experimental stations and employ a whole corps of experimenters.

Both the Ontario government and bee-keepers are to be congratulated that they are to have one so competent in so many ways to labor with the bees themselves, in order that theories concerning them, and their habits may be demonstrated, and better ways and methods discovered for the more successful management of the apiary. It is hoped that Mr. Pettit may have the fullest support and cooperation of all the bee-keepers in Ontario, so that his labors may result in the highest good to the largest number of those in whose interest he will now devote his time and abilities. Having a very pleasant personal acquaintance with Mr. Pettit, and also with his father, Mr. S. T. Pettit (who is also one of the oldest leading bee-keepers of Ontario), we bespeak for the new Provincial Apiarist a large measure of success in the field of apiarian experimentation.

COMB
HONEY
CANNOT
BE MANUFACTURED
ARTIFICIALLY
IT IS
PURE AND
WHOLESOME SWEETS.

HONEY EXHIBIT AT JEFFERSON COUNTY (N. Y.) FAIR.

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To Iowa Bee-Keepers

We have been requested to republish the item on page 88 of the March American Bee Journal, relative to securing a bee-disease law for the State of Iowa. It was there urged that every bee-keeper in Iowa write to his members of the legislature to be sure to do all they can for the passage of the law in their interest. We think it hardly necessary to publish what appeared on this matter in last month's number, as it should be sufficient simply to call the attention of the Iowa bee-keepers to the subject again. They will certainly act promptly and effectively, and thus help in securing the enactment of their much-needed law against bee-diseases, and for the inspection of apiaries.

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Italian Queen-Breeder in Earthquake

A noted Italian apiarist, Signor Vincenzo Asprea, is a breeder of Italian Queens for export, and translator into the Italian language of several foreign studies on bees, among others the Bulletin No. 55 of the Bureau of Entomology "The Rearing of Queen-Bees," by Dr. E. F. Phillips. Mr. Asprea lives at Gallina, in the close vicinity of Reggio, the unfortunate Calabrian city destroyed by the earthquake in December last.

L'Apicoltore, published in Milan, in its February number says:

> "We have received many postal cards from bee-keepers who enquire about Mr. Asprea with words of sympathy. We have transmitted these to our friend, who replied thus on January 14: 'I have received your letter, and thank you and all our good friends for the interest you take in me. We are living a sad life, desolate among the ruins; we are badly sheltered in huts built hurriedly with our own hands under the menace of cold and rain. It rains, it rains with a steadiness unknown in these parts. And our poor dead still remain buried under the stone-heaps of Reggio, from which we have not been permitted to dig them out, neither do the soldiers succeed in doing it. They lie pell-mell with other dead, as the walls and timbers that crushed them buried them, and are decaying there.' "

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Apiaries of Mr. and Mrs. Howe, Etc.

I am sending some photographs. No. 1 is the apiary of Mrs. Geo. B. Howe, in 1908, of which she is justly proud. This little apiary produced honey enough to pay for itself at $6 per colony last spring, and some besides. I call this good for a dry year. Our bees averaged about half a crop or less.

No. 2 shows our home apiary of 266 colonies of 3-banded leather-colored Italians, in 1908. I have bred this strain for 12 years, and have a strain that cap their honey white. I would be glad to pay a good price for a breeding-queen that will produce better honey-gatherers and cap their honey white.

I think if the bee-keepers would take more pains to breed better bees there would not be any need of all this shaking that some advocate. I do not see why any one can not do as well as I have done. I got the best honey-gatherers I could get, and bred them, not for beauty, but for *honey*. I find after years of careful breeding that there is a steady gain, and I test the best strains I can get beside my own. Do not think that because you have a good breeding-queen that is all you need, for you need just as *well-bred drones* as queens. I am more than convinced that you must have them in order to get the best results. I do want a pure queen for a breeder. I know that there are some that claim that a hybrid is just as good, but I claim that more lasting results are secured with a pure queen, and the young queens are much more even as to honey-gatherers. I hope that the bee-keepers will wake up to what they are losing.

There is not a bee-keeper who can not improve his bees, and get more honey, by careful selecting and breeding. I have done it, and others can. Do not keep a poor queen if you know it. Get her out of the yard as quickly as you can.

No. 3 is D. R. Hardy's apiary, in 1907. He is a firm believer in well-bred bees, and is a breeder of the Carniolian crosses, is a successful bee-keeper, and is well known at our bee-conventions.

No. 4 shows a honey exhibit at the Jefferson county fair, Watertown, N. Y., put up by Messrs. Hardy, French, Simmons, and Howe.

How I do miss the American Bee-Keeper! The February number of the American Bee Journal is a hummer.

Geo. B. Howe.

Jefferson Co., N. Y.

◆

Apiary of D. R. Hardy, Jefferson Co., N. Y.

Indiana Bee-Disease Law

Last month we mentioned the passage of a law in Indiana in the interest of bee-keepers. Not only for the benefit of the bee-keepers of that State, but that other States not having such needed law, may see what Indiana has enacted, we publish the sections of interest to bee-keepers, as follows:

HOUSE BILL NO. 144.

A Bill for an Act to amend sections 8, 9, and 10, of an act entitled, "An act to provide for the appointment of a state entomologist, defining his powers, prescribing his duties, fixing his compensation, providing for the inspection of nurseries, and to prevent the dissemination of the San Jose scale and other dangerously injurious insects and plant diseases, defining the penalties for the violation of this act, making an appropriation therefor, repealing all laws in conflict therewith, and declaring an emergency," approved March 9, 1907, and also adding sections thereto to provide that the state entomologist shall be State inspector of apiaries, prescribing his duties and fixing his compensation as such inspector; providing for the appointment of deputies and assistants to the state entomologis; and limiting their salaries; providing for the filing of affidavits by parties affected by the inspection clauses of this law, and declaring an emergency.

Sec. 4.—The state entomologist shall be and is hereby constituted State inspector of apiaries and as such inspector it shall be his duty to aid and assist in the development and protection of the bee and honey industry in this State, and to adopt and carry out proper measures for the prevention and suppression of contagious and infectious diseases among bees.

Sec. 5.—The state entomologist shall have full power and authority at his discretion to visit and examine any apiaries for the purpose of discovering whether or not any disease may exist among bees in any part of the State. When notified of the existence or the probable existence of foul brood or other contagious or infectious diseases among bees in any apiary in the State, he shall visit and examine said apiary so reported and all other apiaries in the same neighborhood that he may be informed about by diligent inquiry or otherwise, for the purpose of determining whether such disease exisits or not. Whenever he shall be satisfied of the existence of foul brood or other diseases in their malignant form in any apiary it shall be his duty to order all colonies so affected, together with all hives occupied by them, and the contents of those hives and all tainted appurtenances that cannot be disinfected and that might cause the further spread of the disease, to be immediately destroyed by fire under his personal supervision and care, but where said entomologist, who shall be the sole judge thereof, shall be satisfied that the disease exists in incipient stages, and is being or may be treated successfully, and he shall have reason to believe that it may be entirely cured, then he may in his discretion omit to destroy or order the destruction of the colonies or hives in which the disease exists.

Whenever the disease shall be found to exist and tbe treatment for the same shall be ordered by the State entomologist, he shall give to the owner or person in charge of tbe apiary instructions as to the manner of treatment of such apiary, and to see that such treatment be carried out, and should the said owner or person in charge of said apiary refuse or fail to carry out the said instructions to the complete eradication of the disease, or the satisfaction of the State entomologist, he shall destroy or order to be destroyed all said diseased colonies by fire as provided for in case of disease in its malignant form.

Sec. 6.—The State entomologist shall have full power in his discretion to order any owner, possessor, or person having charge of bees dwelling in box-hives (having mere boxes without frames), in apiaries where disease exists, to transfer such bees to movable-frame hives, within a specified time, and in default of such transfer he shall order destroyed or destroy all such box-hives and the bees dwelling therein.

Sec. 7.—The said State entomologist shall have the right to enter for the performance of his duties upon any premises where bees are kept.

Sec. 8.—The State entomologist shall include in his annual report to the governor such information in regard to the work of the apiary inspector and bee-culture as he may deem of importance to the State.

Sec. 9.—Any owner of any apiary where disease exists or any person or persons, company or corporation who shall sell, barter or give away, or import into this State any colonies or colony of bees or appliances infected with disease, or expose to the danger of other bees any comb, honey, bee-hives or appliances or things infected with the disease, or conceal the fact that disease exists among his or their bees when disease is known to exist, or refuses to allow the State entomologist to inspect or treat any apiary or appliances, or shall resist, hinder or impede him in any way in the discharge of his duties under the provisions of this act, shall be guilty of a misdemeanor and upon conviction shall be fined in any sum not less than ten dollars ($10) nor more than twenty-five dollars ($25).

Sec. 10.—Every bee-keeper or other person who is aware of the existence of foul brood or other infectious or contagious diseases either in his own apiary or elsewhere, shall immediately notify the State entomologist of the existence of such disease, and in default of so doing shall be guilty of a misdemeanor, and upon conviction shall be fined in any sum not more than ten dollars ($10).

Sec. 11.—Apiaries within the meaning of this act shall be any place where one or more hives, swarms, or colonies of bees shall be kept.

Sec. 12.—Whenever as the result of an official inspection the State entomologist or any of his deputies shall order the treatment or removal of any trees, vines, shrubs or plants, or shall order the treatment or destruction of any bees, have, frames or other appurtenances connected with apiculture he may require that an affidavit shall be filed by the owner or person in charge of the property so affected in which it shall be stated that the treatment ordered has been carried out to the best of the affiant's ability, and that the work had been effective for the purpose prescribed. Any person making such affidavit, knowing the same to be false, shall be guilty of perjury.

Sec. 13.—The State entomologist shall have the authority to employ such deputies and assistants as the work of the office may require. They shall hold office for such periods of time as the work of the office may require and in their appointment the State entomologist shall consider only their fitness for the work which they will undertake, disregarding entirely all political affiliations. The salary of no deputy shall exceed twelve hundred dollars ($1200) per annum. The inspector of apiaries shall receive for his services the sum of one thousand dollars $1000) per annum in addition to his salary as State entomologist. Such compensation to be paid out of the general appropriation for this act.

Sec. 14.—Whereas an emergency exists for the immediate taking effect of this act it shall be in full force and effect from and after its passage.

We think that Indiana bee-keepers are to be congratulated.

Mr. Walter S. Pouder, of Indianapolis, who did valiant service in securing the passage of the foregoing law on March 5, 1909, wrote thus on March 6:

"In my opinion we have the very best bee-law in the Union. The office of our Entomologist will be a permanent headquarters. Some may think that the method of disposing of diseased bees could be improved, but we expect to have an inspector who will use good judgment in this part of the work."

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Honey - Sweetened Tea for the Memory.

"For a bad memory," says The Federal Independent Bee-Keeper, "drink sage tea, sweetened with honey." Now what can we drink "sweetened with honey" to make us *forget* disagreeable things?

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.]

How to Clean T-Tins.

I am asked how to clean T-tins. I am glad to be able to tell of an easy and successful way to clean them without scraping, for I know what it means to scrape them.

A large iron kettle, such as is used in butchering hogs, is a very good vessel for the purpose, for it can be used in the open air and all the muss taken outdoors. Fill the kettle a little more than half full of water (the amount will depend upon the number of T-tins to be cleaned); build a good fire under it, and when the water is boiling hot add 2 or 3 cans of concentrated lye, pouring in very carefully and slowly, because the lye is likely to boil over.

Now put in as many T-tins as the kettle will hold without being too much crowded, for there must be room enough to move the T-tins about freely, so the lye will reach all parts. This can be done nicely with a four-tined pitchfork. Slowly lift the tins up and down with the fork, so the lye can get at all parts, and the loosened propolis will be washed off by the same movement.

If the lye is strong enough a very few minutes will be sufficient to clean them thoroughly. Now lift them out with the fork into a tub of clear rinsing water, souse them up and down a few times, and lift out, setting them up on end in a crate or box to drain.

The amount of water and lye used must be governed by the number of tins cleaned. Whenever the solution acts too slowly, add more of the concentrated lye, and water must be added, too, when needed. See that the water is kept hot all the time.

I am sure you will be pleased with this way of cleaning, as it is very simple, and the T-tins look like new after their bath.

Wearing Bee-Gloves—Mud for Removing Propolis from Fingers.

That always interesting Scotchman, D. M. Macdonald, says in the British Bee Journal, that he never wore bee-gloves, and never will, but will look on their use with more tolerance after reading in this department that the sisters care more for gloves as a protection against propolis than as a protection against stings. He then says:

> "By the way, I find the best effacer of this tenacious adherent is *mud*. A fair flow of water, falling some two feet, is available. If the hands are 'soaped' by the rough mud and cleansed under this flow it clears the propolis off expeditiously, and generally most effectively."

That's new. Wonder if he uses any particular brand of Scotch mud, or whether common American mud would do.

Referring, again, Bro. Macdonald, to your statement, "I never wore them when manipulating bees, and never will," please don't be too sure. Not a thousand miles from here there was once upon a time a certain bee-keeper who scouted the idea of wearing bee-gloves. But when his bees became cross enough he was glad to don those same despised gloves. Are you sure that you will never have cross enough bees?

Good Bee-Country.

I live very near Swine Creek, in Geauga Co., on the banks of which grow sweet clover, spearmint, peppermint, heartsease, purple aster, milkweed, boneset, and goldenrod. Fields of alsike clover are growing near, and the seeds have scattered over the pasture. White clover grows wild here. Would you call this a good bee-country? OHIO BEE-WOMAN.

Yes; especially if alsike and white clover are abundant.

A Preacher's Mellifluous Words.

In Bishop W. A. Quayle's book, "The Prairie and The Sea," page 127, occurs the following passage which is as sensible as it is beautiful:

> "And the bee-weed, swarming with bees, tosses its pink blooms; and the sweet clover, with its perfect musk of perfume, so sweet that it is no wonder, as I walk along-side it, the hum of bees is as if a hive were there instead of a flower. Can that be set down as a weed and a nuisance which gives daily bread for the bees and honey for hot biscuits on wintry mornings? These are solemn thoughts, as we ministers say. And alfalfa has strayed out of the field where it has been fenced in, and its smell is sweet, and its bloom is purple as king's robes; and I forget it is grown for hay, and think it is grown for perfume and poesy. God is so given to blending utility with æsthetics. He loves to."

The Good Work of Two Bee-Sisters.

Louisa C. Kennedy gives the following interesting account of the work of herself and sister, in Gleanings in Bee Culture:

> After our father was taken from us, 16 years ago, my sister and I carried on the apiary. That was the spring when everybody lost nearly all his bees. We lost all but 18 queens with a mere handful of bees for each—perhaps not more than a pint of bees to the queen. We fed and built them up and then divided them until we had 35 good colonies. That would have been a pretty good honey-year if we had only had the bees to gather it. As it was, we sold about $102 worth of honey. Since then we have had some pretty good honey-years, and a good many very poor ones. The poorest year we sold only $31 worth of honey; the best, $578 worth.
>
> The greatest number of colonies we ever had at any one time was 93; the fewest, 18. During the 16 years we have received for honey sold, $3,196.99. During this time our expense for the apiary has been $576.66. Upon the whole I think that is not so bad for two women, pretty well along in years, to do. During the last few years we have had our brothers to help us with the heaviest of the work, such as taking off honey (we have always worked for comb honey), fixing up the bees for the winter, etc.
>
> This present year the forepart of the season was so wet and cold the bees could not work. When it did become dry and warm they tried to make up for lost time. We got about 3000 sections of honey and about 600 more this fall. We had 60 colonies, spring count, and we now have 72 good strong ones in winter quarters.

Honey and Water-Cress Juice for Removing Freckles.

Take water cresses, wash well and let drain, mince fine and press. Weigh the juice obtained, and mix with 1-3 of its weight of honey, and filter. Each morning and evening wash the freckles with this solution.—L'Apiculteur.

"Wide-Awake" Sisters?—Sure!

G. M. Doolittle, page 98, says of the wide-awake bee-keeper, that "he or she will begin looking about to see if everything is in readiness for the summer campaign." Thanks, Bro. Doolittle, for that "or she," thereby recognizing that there are sisters in the craft and especially for classing them among the "wide-awakes."

Appreciates His Wife.

Mr. C. N. White says in the Irish Bee Journal:

> "My successes, such as they are, I attribute in great measure to my wife, and I often wish that more men were blest as I am in this respect."

Mr. White's case is probably not so exceptional as he thinks. Not a few bee-keepers are glad to give their wives full credit, and others are just as much indebted without saying anything about it. Not that they are ungrateful, but it doesn't come in handy for them to mention it.

Honey Egg-Nog—It's Good.

Here are directions for a delicious egg-nog, with a rich, nutty flavor, made without brandy from an original recipe by the writer:

> Take the yolk of one egg, beat well. Add slowly one level teaspoonful of sugar. Continue beating until the yolk is a light, thick froth. Then add a level teaspoonful of bees' honey, dropping it in while beating. Beat the white of an egg to a firm froth. *Pour the beaten yolk into the white*, gently folding it in. This will make a tumblerful.
>
> Egg-nog made in this way is doubly nourishing—the honey having much the same nouirshing quality that olive-oil has. At the same time it is most palatable to one of weak digestion, and acceptable to all of strong temperance principles. I think any one who tries it once will wish to try it again and again.—A. V. F., Tenn., in The Delineator.

We have tried this and it is good.

A Sister's Good Success—Bee-Postal Cards Help Sell Honey.

DEAR MISS WILSON:—I thought I would have a short chat with you. I had good success with my bees last summer. It was a great swarming year, but I did not lose a swarm. I have sold over 1,000 pounds of honey, and have 1,000 pounds yet to sell. I am selling at from 11 to 12½ cents per pound. I have 51 colonies of bees put into the cellar. I think the bees would have gathered 3,000 pounds had it not been for a dry spell we had after harvest.

I think the humorous bee post-cards offered by the American Bee Journal are a good thing. Sending them to honey customers has helped the sale of many a pound of honey.

Catherine Wainwright.

Tilton, Iowa, Feb. 11.

Sorry you did not mention how many colonies you began the season with. As it was a very swarmy season, and you ended with 51 colonies, the probabilities are that 2000 pounds was a big yield for the number you started with. Let us hope that you may make as good a report in 1909.

Some Texas Notes and Comments.

Sorry, Editor York, that old "Grippe" has had you (page 38, February issue), but if that's the cause of the *extra-good* number of the "Old Reliable" gotten out for February—I well, I don't wish you would have the "grippe" again, but, but, I'd be willing to wait a little longer each issue.

THAT REMARKABLE OVERFLOW.

That flooded apiary of T. P. Robinson, of Bartlett, Tex., described on page 66, was indeed remarkable, as he says very little loss occurred of bees, brood, etc. I should have expected fully one-half of the flooded colonies to have swarmed out if they were not promptly looked after, their combs dried, etc. That has been my experience with flooded bees. Perhaps, as he stated, it was owing to the short time the hives were in the water.

PROSPECTS AT THIS TIME.

Extremely dry weather is reported now almost all over Texas, and it is becoming serious. It is now planting time with the farmers, but no moisture to bring up farm and garden seed in many places. What effect this will have on the future honey crop of the State, we can't say. It is said, however, that dry years are the best for honey in some localities here. Let us hope if the drouth continues this will prove the rule rather than the exception in all localities.

BEES GENERALLY IN GOOD CONDITION.

Bees have come through the winter in extra-good condition all over the State, so far as heard from. They are strong in bees and well supplied with honey, and if we have our usual honey-flows there should be another large honey crop for Texas. But who can tell what the future has in store for us? I am forced to admit that prospects are anything but bright for the apiarist, owing to the drouth, which seems to be general over the State.

PURE BLACK BEES DISAPPEARING, ETC.

Out of 40 bee-trees myself and one of my sons have found and cut the past fall and winter, not one contained pure black bees. They were all hybrids that showed more or less yellow bands. A few colonies showed all the markings of pure Italians, but, in reality, they were hybrids, too, as their disposition clearly showed.

My object in writing this is to show that the true black bees of 40 years ago are fast becoming a thing of the past. Black bees may be the best for some localities and for some few people. I think very few, however, here in the South, would prefer blacks to Italians after having tried both. It is true, we have some hybrids that are the equal of any bees on earth when it comes to honey-gathering, but I am sure that the improvement in these hybrids comes from the Italians.

HOW FAR DO BEES TRAVEL?

Here are some of the things I should like to see discussed in the American Bee Journal by some one who knows.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

The Honey Prospects in Texas.

We are anticipating a banner honey-year this year. From reports and places visited, the majority of the bee-keepers are "figuring" on a crop, as the prospects are quite good. It is true some localities are needing rain badly, while others (our own included) have had recent rains. Since we had rain during last fall and in the winter, we may expect a crop of mesquite honey as a certainty, no matter how dry it remains even after it has bloomed. "The dryer the better for it providing we have had a good fall and winter season," is an old saying with the bee-keepers here. Just so it does not rain during the blooming period, for the mesquite blossoms are very delicate, and rains wash them all to pieces. Early rains before this time are beneficial, however, as they help other vegetation, and cause the bees to be in much better shape for the mesquite flow when it comes.

I have figured this way for years: If it is too dry for anything else, and we have had much winter rain, so that it is too wet for mesquite honey, we bend all of our energies toward a crop from the cotton fields, which, in that case, would be of rank growing cotton-plants that yield honey abundantly. We had just such a year in 1908, getting very little mesquite honey, but much of the latter. Since I, myself, have not seen an entire failure in Texas, I can not believe that such could take place. The great "Lone Star" State's locations vary so much, and there are so many, that some honey will be gotten somewhere.

Mulberry Shade for Bees.

Where natural shade can not be obtained I would prefer to plant some rapid-growing, shade-producing tree than to go to the expense and trouble of making and continuously handling shade-boards. There are a number of different kinds of such shrubs or trees that would answer the purpose nicely. I would not select an evergreen, however, as I have found, after planting an apiary with such, that it is undesirable. My preference is for a deciduous tree—one that sheds its foliage in the late fall—so that the sun can warm up the hives in the early morning and other parts of the day.

While visiting an apiary I found that a common wild mulberry, growing here in many places, was used for this purpose. I was so well pleased with it that I obtained a picture showing one of these without the leaves in early spring, and with its foliage in the summer. There is also a view of part of the apiary of such trees. In the midst of our hot summers it is a pleasure to work in such a yard, and these are permanent shades. With shade boards one must work right in the hot sun, handle them every time a hive is to be opened, and these have to be repaired frequently, making them an extra expense.

Mulberry Shade-Trees.

Speaking of shade-boards, I have seen hundreds of different kinds. Some were very frail, and more inexpensive, while I saw some made out of 2 x 12 inch lumber cleatd together, making them weigh about 75 pounds each. Such are a nuisance, if the lighter ones are not.

First, How far will bees fly for water if forced to do so? That is, if bees were placed in a locality where there was no water within 4 or 5 miles, would they go to water that distance? As a starter, I will say the greatest distance I have ever found bees from their watering place was 2 miles, and but a few trees that distance, and I have found several hundred bee-trees in my life. But that by no means proves that they would not go further.

Second, How far will absconding swarms travel to hunt a future home? I have good evidence to show they will go 20 to 25 miles from their starting place, but how many times they "camped" on the way, "I don't know."

L. B. SMITH.

Rescue, Tex., Feb. 27.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

Condition of the Clover.

Much has been said about the killing of the clover in some sections, but I am glad to be able to say that it is in good shape so far in our section. Just today I heard that it was badly damaged in some of the lake counties, but I trust the injury will not be as extensive as anticipated.

Ontario's New Apicultural Station.

Mention was made a short time ago about the intention of the Ontario Government establishing an Apicultural station at Jordan, Ont. While the writer is aware of the appointment having been made, of a competent apiarist to have charge, yet the announcement has not been officially made as yet, so I will refrain from making any definite statement till the next issue of the American Bee Journal. At the same time I expect to be able to give the Department's program for the inspection work for 1909. (See department of "Miscellaneous News Items."—G. W.Y.)

Condition of Cellar-Wintered Bees.

R. F. Holtermann, in Gleanings for March 15th, has an article in which he states that the present season has been very bad for cellar-wintered bees. He says, "During my 26 years of experience in bee-keeping there has never been such danger for the bees wintered in the cellar as there is this winter." Then follows a well written article, setting forth the advantages of abundance of fresh air for bees in the cellar, especially so at times when the temperature goes up to 50 degrees or over. Mr. Holtermann has an ideal cellar, but I suspect there is a great difference in wintering 500 colonies in one place, as compared with say 100 or more in another cellar. Anyway, all the cellars around here are of the ordinary kind under the dwellings, with no arrangement for ventilation, and while I have been in some of these cellars during the past few weeks, the bees in every case are simply in perfect condition. With the one exception mentioned last month, this is the trend of all reports received up to date.

Only a few days ago, the writer was in the cellar of J. F. Davison, and although the bees are in the same place where all the vegetables, etc., are kept, necessitating frequent—in fact, daily—visits to the cellar; yet I never saw bees so quiet at this late time of the season. We walked among them with a light, looked up in the clusters of most of them, and probably stayed in the cellar for 10 minutes or more. Yet this cellar has absolutely no way of getting ventilation, except through a window which is opened at nights during warm weather.

Mr. Sibbald reports the best wintering in his cellar that he has ever experienced, and he was telling me a few days ago that on visiting the cellar he found so few dead bees on the floor that it was possible to walk carefully and not step on any; this in spite of the fact of there being 160 colonies in the cellar, and no dead bees having been swept up before his visit. This cellar, I understand, has no *system* of ventilation either; and while I do not say but that abundance of fresh air is helpful under certain conditions, yet I do think that the nature of the stores is a more important factor than the matter of ventilation. My limited experience in cellar-wintering of bees, coupled with a more extensive observation of bees wintering in other people's cellars, convinces me most emphatically on this matter.

I might say that in the two cases just illustrated, the bees are almost entirely on sugar syrup, and bees thus provided for, will winter in almost any old place, while others show signs of dysentary early in February even if they are in the most approved cellar.

The Bees Wintered Outdoors.

As to the bees wintering outside, from reports to hand, I would judge they, too, are coming through in fine shape. Our bees here have not had a good cleansing flight for 4 months, although today (March 23) nearly all colonies flew a little. The day was bad, however, and I would have been better pleased if they had not come out at all, as a cold wind was blowing from the north, and many bees dropped in the water which is around the yards in some places this spring a bit too plentiful to suit me. We have had more trouble from water in the yards this season than I ever experienced before, owing to the peculiar weather conditions; but little snow on the ground, the frost has penetrated quite deep, and as the snow in the fence corners and other places melts, the resultant water spreads all over and has this spring come around hives that have been in the same place for years, and were never before bothered. Straw was scattered around as much as possible, but surrounding areas could not be reached and many bees were lost. Bees will rise from snow, but if they fall in icy water they are down and out.

Referring again to how our bees are wintering outside, I am glad to say that although they have not had a cleansing flight, yet they seem to be in first-class condition; and as far as I know there is not a colony dead in the lot. Of course, there is lots of time for losses yet, but it is encouraging to know that they are in good shape so far, as, when that is the case, the chances are fair that they will be in the same condition in 2 months from now.

Editor Root is very much in favor of a sealed cover over bees wintering outside, but I, for one, cannot agree with him on this question, in at least so far as our cold climate is concerned. He says that with a sealed cover the moisture condenses on the sides of the hives and then runs out at the entrances. It will run out until it *freezes*, as it is sure to do in a real cold snap, as we are liable to get here in our section. Even if the entrances do not freeze shut, the sides of the hives will get coated with ice, and that is a condition not to be desired.

In answer to a correspondent, Mr. Root says, "It is almost impossible to keep these absorbents from becoming very damp, and freezing in winter."

During our coldest snap this past winter, having just read a like expression of Mr. Root's, for curiosity's sake I went and looked at the packing of the hives in two of the yards. In one of the yards the packing consisted of about 12 inches of wheat chaff over each hive, the hives being of the double-walled type. The covers are of the gable pattern, and over the chaff there would be a space of about 10 inches deep. Over the chaff was loosely placed an inch board, and examination showed the under side of the board in every case to be frosty all right, but the dampness in no case extended over an inch or two in depth in the chaff, and in all cases everything was perfectly dry and cosy next to the bees. Without a space for the air to circulate over the packing, the absorbent material *will* get damp, but, as can be readily seen, this condition is readily avoided.

A few years ago, during an excessively cold winter, nearly all the bees around here that were wintered with sealed covers, perished, while those with absorbents came through in good shape. Mr. Hoshal, one of our best bee-keepers, in that winter, experimented with some colonies by having a hole put through the boards that he always left next to the bees, as he had generally practised the sealed-cover plan for wintering. Well, that winter, nearly all his bees with the sealed covers died, while all those with the "safety valve" in the top, came through in good shape. Many have had a like experience, and for my part I know that the absorbent system is all right, but I cannot say that for the sealed covers. At the same time, I believe that some very successful Ontario bee-keepers are using the latter system with success, but, for me, I want none of it, as my experience with the sealed covers was a costly one.

I forgot to say that in the other yard I looked at during the cold spell referred to, the bees there all had a cushion of sawdust over the frames to the depth of about 4 inches. In this case, too, there was no dampness next to the bees at all, but, as in the other case, there was lots of room for air circulation over the packing.

Where bees have a flight every 2 weeks or 10 days, as is the case in Editor Root's locality, the sealed covers may be the best, but where there is pretty steady cold weather for 4 months or more, with no days suitable for a flight, it is an entirely different proposition.

Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

Objects to Sweet Clover.

I notice that a correspondent of Wallaces' Farmer comes out strongly against planting sweet clover. He admits it makes good honey, but it has no other value. "My advice," write this Iowa farmer, "to any one who is thinking of sowing sweet clover is, don't do it, for I have had experience with sweet clover." We Californians wish we could have more of this clover, but it is a pretty safe proposition that we will not, owing to the dryness of our summers.

Stachys Bullata.

Here is a plant that seems to have been despised by everybody, including even the apiarist. I presume this has been owing to the fact that it is a retiring or modest sort of member of the vegetable kingdom, for we do not find it growing in places where it can rub up with and get acquainted with every person who goes a-tumbling over the face of the earth. We find it hid away in hedgerows, and along the banks of creeks, and other out-of-the-way places. While sometimes it creeps a little out of retirement and encroaches upon cultivated spots, still, it never becomes a noxious weed.

If it were not for the fact that it is one of our important honey-plants, I should not be noticing it here. It is a perennial, coming up from the roots very early in January each year, and begins to blossom in early spring, and sometimes so continues the year through. It is of rather low-growing form, and to the casual observer looks much like the black sage; the flowers, however, are usually red-purple. It is rich in nectar and furnishes considerable forage for bees. Owing to its long period of infloresence it is no mean adjunct to our bee-pasturage.

There are several varieties, but *S. Bullata* is the most common; it is found everywhere in the State. Its common name is "Hedge Nettle;" it is not a nettle, though, withal its stems, spikes and leaves are covered with nettle-like hairs.

Stachys Bullata.

Covers for the Brood Chamber.

Many bee-keepers in this State like to cover the top of the frames with some sort of material or fabric. For many years burlap was used; common grain sacks being handiest and cheapest. Withal the bees gnawed and soon destroyed this material, it was much used. Another objection to its use was the fact that it seemed to absorb moisture more readily than any other material. This I think a mistake. When whole sacks were used a goodly portion of them hung over the sides of the hives and they easily became soaked with rain, and by natural causes the moisture penetrated to the interior above the frames. Where wide covers that extended an inch or so all about the body of the hive were used, this trouble was not noticed, unless the cover leaked. I had used such sacking on some of my colonies, but of late years I use a heavy duck or canvas.

One may secure discarded canvas bags that contained cement at a trifling cost. One of them will make two covers. The more cement that has worked into the texture of the cloth the better, as the bees won't gnaw the cement after it has become once wet.

Honey as a Health-Food

This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed *free* at the bottom of front page on all orders for 100 or more copies. Send all orders to the office of the American Bee Journal.

Apiarian Pictures

We would be glad to have those who can do so, send us pictures of bee-yards, or of anything else that would be of interest along the bee-keeping line.

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Relationships of Bees — In-breeding.

1. What relation are the drones to the worker-bees of the same queen?

2. What personal relation is the drone in the hive?

3. What do you call in-breeding? Give a practical illustration.

4. Why is a queen called a perfect mother or female bee, when she gives birth to worker bees only, by mating?

5. What is the nearest cross one can make in in-breeding, and what relation are they to each other? (It seems to me that an uncle wedded to a niece is the nearest.)

NEW YORK.

ANSWERS. — 1. The drone has the same mother but not the same father. That makes him a half-brother, doesn't it? But his father is grandfather to the workers; that makes him uncle to the workers, doesn't it?

2. He is not an illegitimate son; so not a bastard. He is a parthenogenetic son.

3. "In-breed," says the dictionary, means "to breed or to follow a course of breeding, from nearly related animals, as those of the same parentage or pedigree; breed in-and-in." It would be in-breeding to have a young queen meet a drone from the same hive, or even with the relation less close.

4. The fact that she may give birth to offspring without mating only proves her a more perfect mother, if that is possible.

5. The mating of parent and child, or brother and sister is probably as close as you can get.

Sloping Cells—Full Foundation Sheets for Swarms—Too Much Honey in Brood-Chamber.

When I hive swarms on full sheets of foundation, they store a good deal of honey in the brood-chamber when first hived, and the cells are built sloping up, or slanting.

1. Will cells thus built be as good for brood-rearing later on as those built more horizontally?

2. How can I prevent them from building sloping cells, or get them built more horizontally?

3. Do you use full sheets to hive swarms on?

4. Do you advise the average bee-keeper to use full sheets when hiving swarms?

5. Do you use, and advise the use of, the full number of frames, or contract the brood-chamber for swarms, or how many frames should be used? I use 10-frame Langstroth hives.

6. What is the best way to prevent too much honey going into the brood-chamber when swarms are first hived?

7. Do you consider it a disadvantage to have swarms store much honey in the brood-chamber when first hived?

Bees swarm here on clover and buckwheat, so we get swarms from June 1 to the middle of August, and sometimes later. Buckwheat honey seems to sell a little better than clover in this locality, although we manage to sell the clover honey at the same price. PENNSYLVANIA.

ANSWERS.—1. I think so.

2. I don't know.

3. Either full sheets of foundation or drawn combs.

4. Yes.

5. Some advocate giving only about half the number of frames at first, each frame furnished with only a shallow starter, and, when these are filled, giving additional frames filled with comb or foundation. The idea is that when a swarm is first hived the bees will build only worker-comb, but not later on. I suspect that for most it will be more satisfactory to give at the start frames entirely filled with comb or foundation, in which case there would be no object in giving less than the full quota at once.

6. Give plenty of super-room. But unless a queen-excluder is used, this super-room should not be given for 2 or 3 days, for fear of the queen going up into the super, for it is generally supposed that the super given to the swarm is one that has already been on the old hive, having a good start in it, and the queen might prefer this to the bare foundation in the brood-chamber.

7. Too much honey would be bad, but I don't believe there's generally much danger of it.

Catching Stray Swarms in Decoy Hives.

Suppose a person sets hives containing frames with a trifle of foundation, in different places about his farm to catch any swarm of bees that comes. Is this right, or is it wrong in any way? ILLINOIS.

ANSWER.—I think I've seen it condemned, but I hardly see how there can be anything immoral about it. It does not entice bees away from their owner; and a swarm that goes into such a hive would leave its owner anyhow. What difference does it make to me where a stray swarm goes, if it soars off anyway?

Judging from Appearance when Bees are Working—When to Put on Supers—Clipping Queens.

1. How do you determine by the appearance of the bees when the gathering of nectar commences? Some bee-keeping friends of mine say they can. Please give me the philosophy of it.

2. Just how long after the commencement of nectar-gathering shoould one wait before putting on the supers? If this is governed by conditions, please explain them.

3. What would be the objection to honey put into sections without separators? Some of the prettiest section honey I ever saw was produced without separators.

4. Which queen leaves the hive at swarming—the young or the old one?

5. What is the best time of the day to hunt the queen to clip her wings?

6. How much do you cut off?

Bees are wintering fine. Mine are out-doors, and I have 100 percent alive yet. UTAH.

ANSWERS.—1 and 2. I don't determine by the appearance of the bees. I watch for the appearance of the very first white clover blossom, and as soon as I see it I begin putting on supers, although bees don't really begin storing until about 10 days later. I woudn't want to wait a day after they begin storing, and prefer to have supers on at least 2 or 3 days before, so the bees may make a start at storing in supers rather than in brood-combs. If I were not in a clover region, I'd try to learn when blossoms first appeared on whatever I expected a crop from. You can tell something about it by watching the bees. There's a lively getting around that shows there's something doing. You will also see the bees carrying in pollen. One of the surest ways to tell is by taking out a brood-comb and giving it a hard shake, when the thin nectar will fly out in a shower on the top-bars. A common rule with some is to put on supers when the bees begin to put white wax along top-bars and upper part of combs. I'd rather have supers on a little before that.

3. Without separators sections are built out more plump, and don't look so lean, but if you try to pack them in a shipping-case the bulged places will crowd into their neighbors and cause leaking.

4. The old queen with a prime swarm; a young queen with an afterswarm.

5. Doesn't matter much when, but there are less bees in the way during the gathering hours than early or late.

6. As much as you conveniently can of the two wings on one side. Half of them will do.

Foul Brood from Dead Brood.

In the summer when the weather is very warm, and the inside of a hive becomes so hot as to kill the brood and it rots in the combs, will that cause foul brood?

MICHIGAN.

ANSWER.—Did you ever know the bees to let it get hot enough to kill brood. And if the heat should kill the brood, the bees would clean it out before it would rot. And if they did let it rot it would not cause foul brood.

Exchanging Queens from Hive to Hive.

What is the best way to exchange queens from one colony to another, the hives not being of the same make so that the brood can not be exchanged? WISCONSIN.

ANSWER.—You can exchange queens by introducing each queen into the other hive with an introducing-cage, just as you would introduce a queen in any case. A little safer way will be to exchange both bees and queens. Shake out into any empty box both bees and queen of one hive, letting the box stay on the stand. Do the same with the other. Now exchange hives and let each set of bees run into its new set of combs. Thus each colony remains on its old stand but has a new set of combs.

Returning Swarms.

What is the best manner of returning a swarm to the hive from whence it issued, so as to make it stay, no further increase being desired? PENNSYLVANIA.

ANSWER.—It doesn't matter how you return the swarm; it will stay as well for one kind of returning as another. It is the condition of things in the hive that decides whether the swarm will issue again, and it isn't the easiest thing in the world to prevent it. The old-fashioned way was to return the swarm every time it issued, and if you don't mind the amount of work involved in returning it half a dozen times or more, the old way is good. Here's another way you may like better: When the swarm issues, return it and kill the old queen. A week later destroy all queen-cells but one. If you miss no cells there ought to be no more swarming.

Moths in Combs and Honey, Etc.

1. Last year I had several hives full of brood-combs and honey that I was saving to put my swarms in. Result of my saving—fat moths. This year I have 2 hives with brood-combs and honey, and what I want to know is how to keep the moths out until the middle of May or the forepart of June. If I smoke them out with sulphur will that help? and how often will I have to do it?

2. The moths even got into my comb honey which is upstairs. How can I prevent them from getting in there?

3. Is it true that moths can not live on comb honey in sections alone? The other day while looking over my comb, I found two, although they were not large, but they had been able to work a web in the comb clear across the section.

4. In cellar wintering in a damp cellar, do the bees need a larger entrance than otherwise? and should it be cooler, or warmer than 45 degrees?

5. Does the bluish-looking mold on top of the frames of a colony in a cellar indicate dampness in the cellar or not enough ventilation in the hive?

WISCONSIN SUBSCRIBER.

ANSWERS.—1. As late as the fore part of June there ought to be little trouble in any part of Wisconsin to keep them in a cool cellar. At least the worms would make very slow work there. You could take a look at them every week or two. You can also treat them to sulphur fumes (carbon bisulphide may be still better.) After giving them one good dose of sulphur, repeat it in about 2 weeks. If you use carbon bisulphide there ought to be no need of a second dose.

2. The easiest way is to get Italian blood. You see, the eggs are in the sections when taken from the hives. Of course you can treat the sections with sulphur or carbon bisul-

phide about 2 weeks after taking them from the hive, but if you have Italians there will be little need of that.

3. I don't think it is true.

4. You need a large hive-entrance in any cellar, but it is more important in a damp cellar. A damp cellar also needs a little higher temperature than a dry one.

5. If it's the kind of appearance I have in mind—grey rather than blue—it hardly indicates anything wrong. Regular mold may indicate either that the cellar is damp or that the hive is not well ventilated, or it may indicate both. A low temperature also favors mold.

Charge for Pasturing Bees.

What is usually charged for pasturing bees? I want to take 10 or 20 colonies 10 miles from home. Wisconsin.

Answer.—There is no sort of rule about it. It's just as you agree. I never agreed to pay anything; but I always left a liberal allowance of honey. In any case you should make such arrangement about it that your landlord will feel he has the best end of the bargain.

Introducing Queens.

1. What is the best way to introduce a queen?

2. What kind of a queen would you recommend?

3. What month is the best to introduce the queen? Illinois.

Answers.—1. When you have a queen sent by mail, instructions for introducing accompany her. They will likely be to let her stay caged in the hive a couple of days without letting the bees get at the candy, then remove the old queen and let the bees at the candy.

2. **Italian.**

3. Any time after honey is yielding well, say from the first of June.

Honey Gives Him the Stomach-Ache.

I am very fond of honey, but unable to eat it as it gives me stomach-ache. Kindly advise me what the trouble is, and how I am to eat it to avoid this distress.

Pennsylvania.

Answer.—Hard to tell what the trouble is. Possibly the honey is taken in connection with too much other food. Possibly too much liquid is taken at the meal. In any case, the probability is that whatever is the cause of the disagreement is something that ought to be changed anyhow, whether honey is eaten or not. Might be well to try taking a small quantity at a meal, not as a dessert after a meal, but as part of the meal, increasing as the honey is borne, and drinking between rather than at meals.

Mating of Queens from Different Localities.

1. Would it be advisable to make queens with drones bred from the same mother?

2. I got 4 queens from the same place in Texas. Would it be better to rear drones from one of them and queens from the other, to mate with for requeening my other colonies, which are black bees? or would you advise me to get a breeding-queen from some one else, and use drones from those I have? Ontario.

Answers.—1. If you mean to mate a queen with a drone reared from the mother of the queen, no; and you probably couldn't do it if you tried.

2. Unless in special cases, it would be better to have the drones and the queens in no way related.

Italianizing Bees—"Tested" and "Untested" Queens.

1. We have 100 colonies of bees which we want to Italianize, but do not know the best way to go at it, as some of our hives have crooked combs. How can we introduce a queen to a colony which has crooked combs? Don't we have to get the old queen before introducing the new one? How would it be when introducing a queen to take a nucleus and place it in a hive, putting this hive containing the queen in place of the old hive, when most of the bees are out at work, letting the flying bees enter in the hive with the new queen? or would the bees kill the new queen?

2. Would it be best to buy queens, or to buy nuclei and rear our own queens?

3. How far away from other bees would we have to place a colony to insure pure mating?

4. What is the meaning of a "tested" and an "untested" queen?

5. Which of the Italian bees are considered tht best and most gentle—the Golden or the 3-banded? Utah.

Answers.—1. Yes, you will have to remove the old queen. A very good way to introduce a queen into a hive with crooked combs, is to straighten the combs, or transfer them into frames. Or, you can drum out the bees, putting an empty box over the hive and pounding on the hive till all the bees run up into the box. Then you can find and remove the old queen, let the bees return to the crooked combs, and crowd the cage with the new queen between the combs. Your nucleus plan will work, only the queen must be caged for 2 or 3 days.

2. You might compromise, buying a number of queens and rearing the rest.

3. You would probably be pretty safe at 2 miles, but to be entirely safe you might have to be 5 miles or more. No one knows exactly how far.

4. A tested queen is one which has been laying long enough so that you can see by the markings of her worker progeny that she has been purely mated. An untested queen has not been thus tested.

5. Opinions differ. Probably the most prefer the 3-banders.

Decoy Hives—Bees in Louisiana.

1. How do you fix decoy hives to catch swarms?

2. Would bees properly handled here be profitable? We have a large lake full of willow, some fruit, and lots of wild flowers during summer and fall, but we have no clover nor buckwheat. Louisiana.

Answers.—1. There is no fixing needed, any more than in getting a hive ready for a swarm. If you put in the hive one or more empty brood-combs it will be more attractive to the bee-moth, for which you must look out.

2. I have no personal knowledge of your location, but it is very likely that you have other flowers that will largely take the place of clover and buckwheat.

Langdon Non-swarming Device—Early Work with Bees.

1. In reading over "The Honey-Bee," Bulletin No. 1, New Series, Third Edition, written by Frank Benton, I find the Langdon Non-Swarming Device, on page 104. What do you think of the device? I can not find anything about it in any of the American Bee Journals.

2. Mr. George Williams says, on page 53, that you get up before daylight and pull your colonies to pieces. Do you think that increases your honey-yield? Indiana.

Answers.—1. Great things were expected of the Langdon device when it was first made known, but the hopes concerning it were not realized, and for some years nothing has been said about it.

2. I never shake my bees merely for the sake of shaking them, and when I manipulate them do no unnecessary shaking. But Mr. Williams thinks the necessary shaking they get makes them work more diligently. I don't know whether he is right or not.

What Supplies a Beginner Needs.

I have 12 colonies of bees in good frame-hives. I am a beginner. What shall I order in the way of supplies? I wish to run for comb honey, and increase by natural swarming. I have nothing in the way of tools, and my time is limited, as I am a rural mail carrier. I have your "Forty Years Among the Bees." I also take the American Bee Journal and Gleanings in Bee Culture. All are fine. Kentucky.

Answer.—It is not an easy thing to tell what any one needs without pretty full particulars as to harvest and conditions. In general terms I should say that you should have on hand enough sections all ready in supers in advance, so that you can give to the bees as many as they would fill in the best season you have ever known, and then an extra one for each colony besides. Possibly you have had so little experience that you don't know what the bees would do in the very best kind of a season. Well, then, we might guess that in the very best kind of a year you would get an average of 125 sections per colony, although that may be putting it pretty low if you are in a good location. If your supers hold 24 sections each, as a good many supers do, it would take about 5 supers to hold the 125 sections, as we don't need to be so exact about it. But some colonies will fill more than the 5, and some less; you can't hold them to the exact number, and at the last there will necessarily be more or less unfinished sections on the hives when the season closes; so you ought to count an extra super for each colony; altogether, 6 supers per colony, or 72 supers of sections for the 12 colonies. Understand, only once in a while you will have a season when you will need so many; but you never know but what the next season may be a bouncer, and you must be prepared for it. What are not needed will be all right for the next year. Even if the season proves an entire failure, your supers will be all right for the first good season that comes.

As to hives, you will probably want to double your number, preventing all after-swarms, so you will need to have in readiness a hive for each colony, or 12 in all.

Getting Honey Out of Combs Without an Extractor.

Do you know of any method of getting the honey out of combs in wired frames without the use of an extractor? Where one has only 2 or 3 colonies of bees, the expense of an extractor is hardly justifiable, as the amount of honey would hardly pay for the machine, and yet the honey must be got out somehow, and should be done without destroying the combs. Idaho.

Answer.—No, I don't think there's any way of getting honey out of combs either wired or unwired except by the use of an extractor. Of course you could wash the combs or melt them, but I'm sure you mean to keep the combs whole.

Increase in July—Hive for the Farmer.

1. Could any increase be made with a queen received in July this season?

2. I have 20 colonies in 3 kinds of hives, most of them 8 and 10 frame Dovetail hives with Hoffman frames. I would like to get them into one kind of hives and frames. Would the Root Dovetail hive take the Miller frame?

3. For the average farmer who will not handle frames very much, which do you think would be best, the 8-frame Dovetail, the 10-frame Dovetail, or the Danzenbaker?

Illinois.

Answers.—1. Yes, you can do a lot of increasing after that time, with plenty of colonies to increase from. At the time you introduce your new queen into a colony, make another colony queenless. A week or 10 days later destroy all the queen-cells started in this latter colony, and give it brood from your new queen. That will give you queen-cells of the new stock, which you can give to nuclei, and these nuclei you can gradually strengthen by giving brood well matured from strong colonies. Of course you will be wise not to draw too much brood at a time from any one colony, always leaving it at least 4 frames of brood, for if reduced too much it might not recover so late in the season.

2. Yes, the Miller frame is the same size as the Hoffman, and fits the Dovetail hive.

3. The 10-frame Dovetail is a safe choice for any farmer.

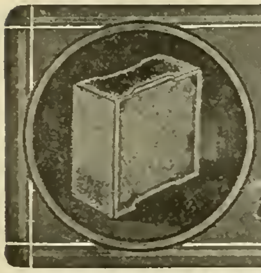
Introducing Queens—Control of Queen-Mating—Long-Tongue Italians—Nucleus Method of Increase.

1. While looking at one of my hives, March 13, I noticed a queen fly from the entrance and make a few circles and then go back to her hive. It was about 12 o'clock, and the thermometer stood at 54 in the shade. Was not that an unusual occurrence for that time of year? The queen seemed small and took wing very easily.

2. I would like to have your opinion on this way of introducing a queen that comes through the mails: Pry the perforated piece of tin off the end, then put queen-excluding zinc over it and let the workers pass out. Then take from the colony you wish to introduce the queen to, enough workers to fill up the cage, then put back the perforated tin, and let the bees eat the candy out before they release the queen.

3. Do you think that if we could control the mating of the queens and drones that we

(Continued on page 146.)



Contributed Articles

Producing Extracted Honey

BY F. GREINER.

From what I have written in different papers on the subject of honey production, it may appear that I produce only comb honey. Some have asked me why I say so little about producing extracted honey, and the answer is, the production of the article in liquid form has always been a side-issue with me, although of late years I am having an increasing call for it, to be used on the table and to be a strictly fancy article. To meet this demand I am obliged to run my most distant out-yard for this product, on account of my nearer yards not furnishing an article to suit my customers. The lighter-colored the honey the better it is liked, although I also produce a limited quantity of buckwheat extracted honey for some special customers, and so I often move a load or two of bees into the hills where buckwheat is grown. Usually, I am successful in this, but 1908 was a season which put all previous years into the shade. From 35 colonies I harvested only about 100 pounds.

The locality where I produce white extracted honey sometimes furnishes a little inferior honey at the beginning of the honey season, early in June, so I have to be on my guard; but after the clover commences the honey will be fine to the end. As soon as the colonies become reasonably strong, each is given a set of extracting-combs (5 inches deep, in the clear) over an excluding honey-board. The brood-chambers contain 8 combs, equivalent to 10 Langstroth frames, the extracting supers containing only 7 combs.

From time to time, as needed, I add more supers, always placing the empty combs next to the brood. I find that of the colonies run in this way nearly 50 percent contract the swarming fever, and it is necessary to make examinations every 6th day, the same as with the colonies run for comb honey, in order to head off all swarming. I feel sure that more breeding room would prevent the swarming, or reduce it to a very small percent; but not wishing to adopt a larger hive, a hive containing more than 8 combs, I continue my practice as outlined, and I make my brushed swarms the same as with the comb-honey colonies.

In a good honey season the hives soon become so tall that it is not practical any more to tip them up for an examination from the bottom. In this case, some of the topmost supers need to be removed, either to be taken home or placed on other hives which are not doing very much work; in this case I let the bees go with the honey. My aim is to have all honey on the hives as long as possible, and not do any extracting till I can make a business of it, and move full loads to the home-yard where the extracting is done.

I realize that a loss occurs by not extracting the combs as soon as taken from the hives, and while still warm, but I cannot yet see my way clear how I could do so.

When the time comes to take the honey, I aim to do so, when there is a prospect of a warm night; then the supers are snatched off as rapidly as possible, freed from the bees, and loaded on the wagon. I can usually take off a wagon-load in an afternoon, load and move it home (a four-hours' drive), and reach the place of destination by 9 or 10 o'clock p. m. Sometimes I have not started till dark, on account of the difficulty to get the load away from the bees. However, it is possible so to handle the full supers, and by so keeping everything covered with escape-boards, or perhaps otherwise, that the bees will not become stirred up and demoralized.

For convenience sake in loading, I make use of special racks having tight bottoms, and holding either 10 or 20 supers each; and when the uppermost supers in them are covered up by escape-boards, the honey is not only perfectly safe against robbery on the bees' part, but what few bees are still remaining in the supers, may work their way out. Thus I have been enabled to move my honey even in daytime, when no honey was being gathered, with but little danger to man or beast.

When arriving home, the honey is taken to the warm and tightly closed honey-house, and the extracting is begun at the earliest opportunity to prevent its becoming colder than there is any need. It is the best I can do under the circumstances. Occasionally I have started the extractor at once, and worked all night.

In all my operations with bees I employ no help, doing all of the work myself. This might not be considered business-like by some of the fraternity, but money is not all we are after. We do not wish to take a foreign element into our family. While it may be true that bee-keepers generally are a better, cleaner set of men than the average laboring class, yet we feel that we can enjoy our family life better by not having strangers with us at all times. We certainly thus avoid the risk of taking into our family an undesirable element, men who will pollute our homes with tobacco, whisky, etc. We are satisfied.

As to the manner of extracting the honey: I do not yet run my extractor by power, although I had contemplated making the proper arrangements for this season. I still turn my Cowan by hand. The uncapping is done with a Bingham honey-knife; cold, no hot water; I find it unnecessary; a large, long box with an inserted screen bottom holds the cappings and allows them to drain. My combs are not all fully sealed, although the majority are. By giving plenty of empty comb the bees are apt to leave the combs along the edges unsealed, particularly so when the season suddenly and prematurely comes to an end, as it did the past year. In such a year the supers also do not become tiered up so high upon the hives but what we can leave all with the bees till the end of the season; and I flatter myself that such portions of the combs as are not sealed contain honey fairly well ripened, although I confess I do not know this to be an absolute fact.

On an average, my combs are more than three-fourths sealed; comb after comb has every cell sealed, and the resulting honey is usually of good body. It is left in the tanks or open barrels covered up with cheese-cloth till all the little particles of comb, bee-bread, etc., comes to the top, which will take a few days. After all foreign matter is skimmed off, the honey is ready to go into the 60-pound cans.

Honey to be put up in glass will soon become cloudy, and later granulate. To prevent this, or defer it for a period, I find it a good practice to heat the honey to about 140° Fahr., before filling the cans or bottles. Even at 130° Fahr., honey becomes perfectly clear, but it must be kept at this temperature for a longer time.

Colonies run for extracted honey throughout the season are, sometimes, short of stores for winter and must be fed. Where fall honey may be had the bees may be allowed to store it in the brood-combs. This provides sufficient stores to carry the bees through the winter and spring here in my locality, and I do not find it necessary to feed sugar.

I usually select the bees from this distant out-yard to move into the buckwheat section, because there is seldom any fall honey-flow. So as soon as the white honey season is done, and before buckwheat commences to yield honey, not far from August 1, I do the moving.

Naples, N. Y.

Quantity Not Quality of Food Decides Royalty

BY W. W. MCNEAL.

Careful research has failed to disclose any evidence to verify the teachings of orthodoxy relating to the food of a queen-larva. The term "royal jelly" has a fanciful, high-sounding note, but it leads one away from the truth. Nature is not partial to royalty in that manner. It would not be in order of economy for the nurse-bees to prepare several kinds of food for the larvæ. The sooner we disabuse our minds of the belief that there is some occult power in the food, the sooner we will be able to rear uniformly good queens.

When Nature would lavish her charms upon any particular larva, she uses the simpler means of increasing the regular ration. Any worker-larva is a queen-larva at birth, and if it has all it wants to eat, the transition from a worker to a queen is sure to follow. The expression that "too much is just enough" is exemplified by the amount of food set before the queen-to-be. Taking the worker-bee as a unit, the perfect queen necessarily represents the best possible development along those lines. Therefore the queen with all her physical graces is just a big worker-bee with a new and greater instinct than her common sister. The reproductive powers of a virgin queen and a worker are the same, for the eggs of both produce only males. When the queen mates with the drone she comes into full possession of her own. She is then said to be fertile, for her eggs are productive of both male and female life. The reproductive powers of the drone are always identical with female life, and *vice versa* the queen. But the fertile queen has the distinction of being able to choose the sex of her offspring. This is the resultant factor, however, in the provision Nature has made, whereby the distinguishing features of the drone become part and parcel of the queen's reproductive system at the time of mating. It is a wise provision, for the danger arising from frequent flights to meet the drone would be a greater menace to the welfare of the colony than the effect of inbreeding, were copulation to take place within the hive. One could hardly dodge the inference that any difference relating to sex in her offspring would be optional with the queen after that event in her life.

The nurse-bees can and do regulate the possibilities that lie wrapped up in every fertile egg, but they can't change the sex of it. In proof of this I have only to mention the fact that the queen always seeks the embrace of the drone before entering upon her duties as mistress of the hive. Nature would not hazard the life of the queen by sending her forth in quest of something not essential to the life of the colony. If the nurse-bees can reverse the existing order of sex just as the occasion demands, the drone would be utterly a nonentity. But all worker-larvæ are females to begin with, and the destiny of each is made sure by means already stated. However, considering. that the queen and the worker each owes its rank in life to the manner in which it was fed while maturing, it follows as a matter of course, that queens can be reared, representing at mature life, every stage of development from the polished physique of a perfect queen down to the common worker-bee.

The conditions essential for the best development of a queen-larva, are (1) all the food it can possibly consume; (2) perfect quiet; and (3) a uniform temperature up to the time the young queen emerges from the cell. When the cell is not kept good and warm, the immature queen cannot appropriate the food as she should, and the effect is the same as if the proper amount had not been given her. The period of incubation will be lengthened, and her life shortened thereby. Any plan or system that does not keep the colony from dividing its forces till the queen hatches, is faulty, and should not be used. Queens reared under the swarming impulse are not always good queens, for reasons just given.

There should be no compromise in the queen's rank, for the temperature of a worker, though usually a good thing in its place, will prove the undoing of a queen. But it is the quantity and not the quality of the food that is responsible for whatever difference there may be between them. I fully believe I am right in this matter, but if any one can prove that I am not, I shall be glad to hear from him. The nurse-bees have no power over sex through the agency of the food. The hidden power which determines that all-important factor must be obtained through the medium of the drone. When the queen has met the drone and usurped his powers, she never again ventures beyond the confines of the hive, save to accompany a swarm.

My observations all tend to show that the fertile queen is not dependent upon any agent or thing whatsoever for the exercise of her doubly constituted powers when depositing eggs in the cells of worker-comb. And, furthermore, Nature would not depart from her customary rulings in so striking a manner if her plan of special provision for fertilzation did not include special endowment of the gift of reproduction.

Amelia, Ohio.

Can for Holding Honey-Cappings, Etc.

BY F. P. DAUM.

In the December American Bee Journal, J. R. Bogart asks for a description of a can to hold cappings and straining honey, etc. I have one that suits me all right, which I had made at a tin-shop for $6.50. I am sending drawings, and will describe them as follows:

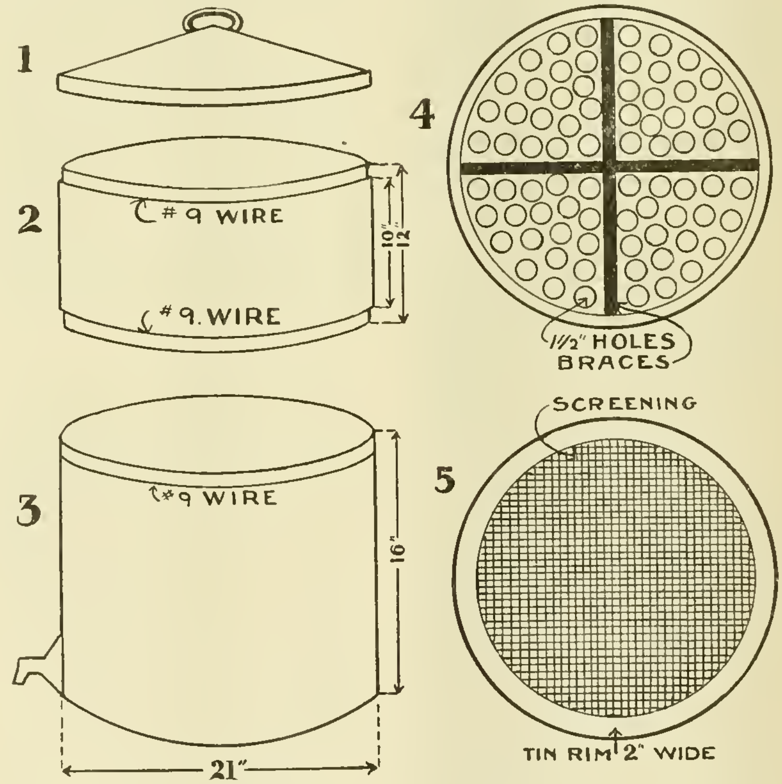
No. 1 fits outside of No. 2.

No. 2. fits outside of No. 3.

No. 4 is the permanent bottom of No. 2.

No. 5 is the loose (strainer) bottom of No. 2.

The bottom inside is 16 x 21 inches; the cappings holder inside is 11 x 12 inches; and the strainer is 21 inches in diameter.



CAN FOR HOLDING CAPPINGS.

I hope these illustrations and description will be a help to Mr. Bogart, as well as to others.

Clinton, Mo.

No. 4.—Colorado Bee-Keeping

BY R. C. AIKIN.

In No. 3, I discussed the question of stimulating brood-rearing by breaking of stores, by readjusting so as to put the honey near the entrance where it would be uncapped and carried back—anything that would cause the bees to handle honey when there was nothing being gathered from the fields. The same question was up for discussion at our Colorado State convention since I wrote the matter referred to, and I feel that I ought to give the reader the benefit of what developed in the convention, as the subject was handled there by some of the big guns.

By some it was argued that feeding, the presence of abundance of stores, or the making of the bees manipulate or handle these stores, would not cause much increase unless there was abundance of pollen in the combs, or being brought in. Many Colorado locations are short on pollen; this is so true that such locations often find the brood-combs almost totally bare of pollen. In my own location in 20 years I have never seen a surplus of pollen in a single hive; I think in only one year in that time the bees did not hunt for flour and other substitutes in the spring, and that one time was a spring that the weather was such that they could fly but very little until pollen was to be found on trees.

Now there is no doubt in my mind but this scarcity of pollen does retard breeding to considerable extent; but that its absence will fully nullify the effects of feeding or handling of stores, I am not prepared to say; my opinion is that the feeding will help. To have a general opinion is not conclusive, and to make comparative tests by experiment, so we have an array of facts, both pro and con, few of us ever do. Because a man gets well of a sickness after taking such or such medicine is never proof that the medicine cured. All in all, we do know that when bees handle both honey and pollen they will breed better than if either is lacking. A shortage of honey-stores is easily remedied; but the lack of pollen is by no means so easy, at least with present knowledge on the subject.

After all was said at the convention I am still convinced that there is benefit derived from my instructions in any case, and if there be plenty of pollen in the hive that is easily available, or a little coming in, much will be gained if the bees are made to handle stores daily. I wish I had some of the pollen the East can spare.

LARGE HIVES.

Regarding the question of large hives, and the getting of these by storifying with the 8-frame, or any other, for that matter, let me say that our people in convention brought decided testimony to bear favorably on the subject. This matter is so important that it ought to be repeated and urged upon the apiarists. The Dadants have for many years urged large hives, and I must say they have the best of the argument—they are right. I notice quite a tendency among our Colorado apiarists to the use of larger hives. I would not recommend the 10-frame hive, but rather the use of two 8-frame bodies. We want an "elastic hive," as some writers used to put it; and another thing is to have the extra proportion in depth rather than width. There is no question about the truth of the theory that a hive not too wide, but deeper than wide, serves the bees better than a shallow wide one; and if the body be in two parts it is elastic, and can be quickly made shallower when it will not injure the colony and will favor results in surplus.

The 8-frame super gives better results in sections than a 10, and this is another reason for using the 8 size. If the apiarist has a mixture he can still use but one size of super. I have for several years used only 8-frame supers on both 8 and 10 frame hives; and this leads me to discussing the question of honey-boards. I know that but few people use honey-boards in comb-honey production, but it is mainly because they do not know their value, and because the manufacturers do not combine them with the hives as sent out.

SLAT HONEY-BOARDS.

I have used all kinds of brood-frames, from the thinnest and narrowest top-bars to the thickest and widest, and I know that bur-combs will be built through any of them; and with the thickest and widest at times, and sufficient quantities to make the use of a slat honey-board a very good investment. Some burs will be built through even the honey-board, too, but it saves a big lot of attachments of comb and honey to the under side of the super. The super should be as clean on the bottom as possible, because if there are bur-combs they must be cleaned off before the super be tiered up or placed over another; if not, the tops of the under sections will be smeared with wax. If the bottoms of supers be clean the operator can handle them just about twice as fast in readjusting or in removing.

The honey-board should be made of narrow slats. I use ⅞-inch, ripping them from common thickness boards. Our factory people persist in making the slats wide, usually from 1⅜ to 1¾; this is too wide. Another fault with the factory people is in making the board with a slat set plump against the rim-piece, so that bees climbing the side of the brood-chamber must turn inwards to find an opening to get above. If anything this is a more serious fault than the wide slat. The rim-piece should be of ¾ or ⅞ width—the same as the thickness of the hive-body sides—then the first slat should be set leaving a good free opening so that all bees climbing the hive side can go right on up the super side, too; and every super should also have a free passage-way up the side, an uninterrupted climb-way to the roof. This is important, and must not be overlooked in hive-construction.

In nailing the honey-boards I do not try to make them break-joint (that is, to have a slat come over the space between top-bars); this feature is a good one, but so hard to maintain because of varying position of the frames if a follower is used—the follower may be on one side now, and tomorrow be on the other side. The slats are just put as close together as can be to let the bees pass freely through.

If you have both 8 and 10 frame hives make just as many of these slat-boards as you have hives, but with this difference: For the 10-frame hives make the board cover the hive—that is, if the 10-frame hive is 2¼ inches wider than the 8, each side slat for the rim will be 1⅛ inches wider than the rim side of the 8-frame board. This of course breaks that direct run up the hive side, but the bees, after turning inward till they find the opening, can then continue on up the super side. With such honey-boards you can use 8-frame supers on any width hive. I use the T-super, and they are made with ordinary thickness ends, and, of course, are shorter than the hive-body, so I make the end-piece of the rim enough wider so the hive-body is fully covered, and still the shorter super covers all openings.

HOW TO CLEAN HONEY-BOARDS.

The honey-boards usually come off at the close of the season with lots of wax adhering in bur-combs. To clean them I heat a tank of water to boiling, then with a pile of the boards beside me I dip them one at a time into the water, churning it up and down until the wax is melted from the end, then reverse and churn as before, until the other end is clean, then flip it onto a pile. The boards come out hot and are practically dry in a few minutes. It is a little warm on the fingers, but not unbearable, and if you have never tried this way it will surprise you how little time it takes to clean several hundred; in fact, you want to work rapidly to get best results. Keep the water boiling, and that throws the accumulating wax to the ends, while you churn in the middle, and the air escaping from the wood and the bur-combs makes an additional bubbling and boiling so that there will be a space of several inches about the churning board that is free from wax. When wax gets so it crowds the churning place, skim off some of it. You can clean a board this way while you would be thinking of whittling the wax off, and the wax accumulations will pay you *big* wages for the time emplodyed.

TOP-BARS WITH GROOVE AND WEDGE.

I know such top-bars are popular, but they are so just because the factory people make them so, and the users never tried other kinds in the right way, if they tried any other kind at all. There is no use whatever in a groove and wedge to fasten foundation; they are worse than useless, being a source of trouble to bee-keepers, and add to the first cost of the frame. Make the under side of the bar just as plain as plain can be. To fasten foundation fix a board about ¼-inch shorter than the inside measure of the frame in length, and a plump ⅛-inch narrower than the net inside measure up and down. On one side, about the middle, nail lengthwise a cleat an inch or so thick for finger-hold, and in one edge near each end drive a nail so that when the frame is laid over the board with the top-bar on these 2 nails the board just comes up a scant half way through the frame. In like manner put one nail only in the other edge of the board, but have this nail at the middle of the length. With 2 nails, one near each end for the top-bar to rest on, and the one at the centre for the bottom-bar, every frame is bound to lie solid without a teeter.

Melt some wax in a cup about the size of a pint dipper or possibly a little larger—this can be done over a common small-burner kerosene lamp; with the lamp you can guage the heat, for the wax should be just thoroughly melted and no more. Grasp the board in the left hand palm up, holding by that strip-handle nailed at its centre, with the right hand drop the frame over the the board, and put the thumb of the left hand against the bottom-bar, reaching the thumb up so its pressure comes on the uppermost edge of the bottom-bar; held in this way the bottom-bar is held firm and snug to the edge of the guage-board, and the top-bar is held down snug against the 2 short-stop nails, and with a 1/8-space crack the entire length between it and the board. With the right hand lay the starter on the board, and against the top-bar, inclining the board from you, and also inclining from your left to right, then with a common tin teaspoon pour wax, starting at the high end and let it run along the bar and the starter until it reaches the other end, when you bring the board to a level so far as its length is concerned. However, to keep the wax from passing down between the starter and wasting instead of running lengthwise, you must incline the board so that the top-bar is almost level crosswise. It takes only a little bit of practice—just a few trials—until you learn the angles at which to hold the frame. If you get the wax too hot it will melt the starter, and is much more inclined to spread and waste; if too cold, it congeals too quickly and does not run freely.

As fast as you get the wax run on, pick off the frame and put it on a pile beside you, until you have quite a bunch of them when you lay down the guage-board and pick up the frame and run a line of wax on the *other* side of the starter, until you have cleaned up the pile, when you run another batch the first side on the guage-board to be served in like manner. This puts a line of wax on each side of the starter, and it is there to stay. It is quicker done than to put foundation into the groove and put the wedge in, and while the wedges will shrink and drop out this will stay. And if you ever want to cut out the comb and put a new starter in, you have a good, smoothe surface to work on. It does not take any more wax, either, at least but a trifle more, and any dirty or off-grade wax will do the job.

Colorado and all of us dry-climate bee-keepers "have a kick coming" on the frame with groove and wedge, for unless we use the frame at once after putting the starter in, or nail the wedge fast, they drop out, then we have comb built in all kinds of shapes, mixed with wedges down on the bottom-bars until it is like tearing a hive to pieces to get the frames out. Let me repeat, that the method here outlined is easier, quicker, cheaper and *better*, than the wedge method. Try it.

Loveland, Colo.

(To be continued.)

Superseding Queens—Uniting Colonies—Shallow Feeders

BY EDWIN BEVINS.

Considerable has been said recently in the bee-papers as to whether the bee-keeper had better do some superseding of queens himself, or leave the matter entirely to the bees. My own experience convinces me that it would have been better for me if I had taken a large hand in the business every year since I came to have any considerable number of colonies. Last season, just after the white clover harvest was over, I concluded to requeen quite a number of colonies that had not stored any surplus, by the plan used by Mr. Chapman in requeening his old apiary.

The writings of Dr. Miller had convinced me that bees are not so foolish as to use larvæ too old for development into good queens when they have larvæ of all ages to choose from. I made queenless some 12 to 15 colonies, allowing the bees to requeen from their own brood, except in one instance where the brood was so scant that a frame of brood was given from another colony.

My examinations showed that but 4 colonies had made any attempt to supersede their queens. Three of them made a success of it. In one colony I found one sealed queen-cell, and as no other cells had been started I concluded that it was a case of supersedure, and did not look any further for the queen. Later I saw evidences of the work of laying workers, and, on examining that sealed cell, I found in it a dead queen.

My experience seems to indicate that but few of the colonies one desires requeened will requeen themselves at the time the work ought to be done for the advantage of the apiarist. Some will not do it at all, as is proven by the fact that I found 2 colonies fairly strong in bees that were entirely without brood of any age. I have seen but one criticism of the above plan of requeening, and that is that one perpetuates all the bad qualities of some of the queens superseded. This is not necessarily so, as an exchange of brood is not difficult, putting the brood of the undesirable queen where it will not be used for queen-rearing, and giving some from the hive of a better queen.

In this case, it seems that it would be a good plan to practise the method only on colonies having satisfactory queens, and to get satisfactory queens in the other colonies as soon as possible.

By a "satisfactory" queen I mean, of course, a queen of a strain you are willing to perpetuate.

UNITING COLONIES.

I notice in Gleanings that Editor E. R. Root has just made the discovery that uniting bees by placing one or two thicknesses of newspaper between the two hives is a good thing. This is a method I have long practised, and I described it in the American Bee Journal several years ago. Shortly after I mentioned the method in the American Bee Journal, I noticed that Dr. Miller advised one of his questioners to unite in the same way. I do not claim that the method is original with me. Probably I got the idea from some writer in some one of the bee-papers. What I claim is that the method is nothing new.

SHALLOW FEEDERS FOR SUPERS.

I wrote something quite a while ago about the desirability of having some shallow Hill feeders to use in spring in chaff-packed comb-honey supers, on top of the brood-frames. I found difficulty in getting the shallow feeders, but the Dadants helped me out. They had some of the perforated covers to the quart feeders, and got their local tinner to make feeders half the depth of the quart ones to fit the covers. I used some of these last spring in supers having chaff cushions in them, and found them to be very convenient, as the cushions could be easily adjusted to prevent the escape of heat from the brood-chamber. The supers with their chaff cushions are left on all of my hives till about the beginning of the honey-flow, as I believe the temperature of the hive is kept more uniformly warm than it would be without them.

Some claims used to be made for the advantages of having single-walled hives, and having them stand out in the sunshine all through the spring; but I have learned to be somewhat doubtful about these advantages. The spring is not all sunshine. I leave the winter packing of straw around three sides of my hives till the middle of May, and sometimes later.

Leon, Iowa.

Laying Workers — How to Get Rid of Them.

BY G. M. DOOLITTLE.

Before me lies a postal card which reads as follows:

> "I had a colony last summer which had laying workers. I did everything—moved hive, gave brood, etc., all to no purpose, the colony finally dying in early fall. What can I do to save a colony under such circumstances in the future? Would it do to unite them with another colony? Would these workers spoil that colony also? Please answer in the American Bee Journal."

Laying workers confront every bee-keeper of any experience, sooner or later, especially if he does not keep a good lookout to see that no colony goes queenless more than 24 to 30 days, or for 2 weeks or more after all brood has emerged from the cells. If no queen is provided, and especially if the bees are of the Cyprian, Holy Land or Italian races, the colony will, soon after all the brood has emerged, set apart some of the workers, from one to several hundred, installing them as queens, after which it is extremely difficult to cause them to accept a queen of any kind.

All colonies rearing young queens should be looked after from 20 to 24 days after the issue of the prime swarm or the taking away of the old queen, and if eggs are not found the colony should be given a frame of which many cells contain eggs and small larvæ, in which case, if the young queen has become lost from any cause, they can rear another. This will keep the bees from installing workers as queens, and at the same time the building of queen-cells on this brood is a sure indication of queenlessness, and when cells are thus built it is better, if possible, to introduce a laying queen at once, for by the time the bees can secure a laying queen from this brood the colony will begin to become populated, and by the time the brood from her eggs emerges will be nearly ruined from the loss of bees dying from old age.

But, if the colony has a laying worker,

what is to be done? That depends largely upon our wants. If we do not care for an increase of colonies, probably the best thing to do is to unite the colony having such workers, with one having a laying queen, which should be done by thoroughly smoking each near sunset, when the combs should be taken out of each hive and alternately placed in another hive, so the bees will be so mixed up that they will not quarrel; or a new hive may be placed on the stand of the colony having the queen, when the bees may all be shaken off their combs in front of this hive, shaking them off the frames alternately so as to mix them up completely, setting the frames having the most brood and honey in the hive, leaving out the rest.

If, on the other hand, we wish to keep all the colonies we can, the colony having the laying workers may be treated in this way: Go to several colonies in the apiary which can spare a frame of brood and take enough frames of brood (one from each) to fill out the hive, or at least two-thirds fill it, being sure that you do not get the queens from any colony with this brood and bees, for we want the bees that are on the combs to go with them in this case.

Now take the combs out of the hive having the laying workers, or what is better, set this hive off the stand it is occupying, placing another hive on this stand, when the frames of brood are to be placed in it. If it is filled only two-thirds full, fill out the vacant space with dummies, as such a colony would build only drone-comb if it built any at all. As each of these frames of brood and bees have a different scent, they will not quarrel when thus mixed up, for each bee that another meets is a stranger, which so confuses them that they do not know what to fight for. When all is fixed and the hive closed, carry the hive having the laying workers in it several rods away, and after having drummed on it a little so the bees will fill themselves with honey, open the hive, take the frames out and shake every bee off on the ground, thus compelling them to fly separately back to where their old home used to be. Arriving here they find a different state of affairs existing from what there was when they left, and if the laying workers get back (which some claim they cannot do) they seem to accept the fact that their reign is over. In any event, the bees seem to be in a condition to accept a queen or rear one, as the circumstances are placed before them by the apiarist.

It is usually best to give them a queen, if possible, or, what is next best, a queen-cell just ready to hatch; but if neither can be done, they will do fairly well at rearing one, as the brood which has been given will keep emerging till they get a laying queen, so that they are nearly or quite as well off, even if now left to themselves, as a colony would be which had cast an after-swarm.

I have frequently gotten rid of laying workers by setting brood in the hive having them, and shaking the bees off their combs at the entrance, letting them run in at once; but as many as 5 frames of brood are needed so as to give enough bees to overcome the influence of those desiring to cleave to the laying workers. In this case, as in the above, the colony is not allowed any of their combs in which the laying workers have laid, for thus allowing them their combs gives them an advantage over the bees that have come on the combs of brood, which advantage we do not wish them to have.

The reason why the questioner failed with the brood was in not giving enough of it, or in not giving bees with it, or else in allowing the bees having the laying workers to retain their own combs.

The Cyprian, Syrian and Holy Land bees are much more liable to have laying workers than the Italians, and the Italians are somewhat more inclined that way than are the German bees, well known as the black bee of this country. The first three named varieties will frequently fill the cells with eggs, which, after being "fed and cradled," will give only drones, and this while the young queen is becoming fertile and laying, thus hurting the combs and the prosperity of the colony very much. However, these races of bees do not cling as closely to such laying workers when they have them as do the Italians and the blacks, so they are more easily gotten rid of.

Borodino, N. Y.

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Chunk Honey for Small Bee-Keepers

BY ALLEN LATHAM.

We read not a little of chunk-honey production in Texas, and can readily see that such honey can be more easily produced than can section-honey. The local demand settles whether we shall produce this or that sort of honey. In the North there is a poor market for comb honey except section-honey, and until we create a demand for chunk-honey we cannot profitably go into the production of the same in large amount. For the small bee-keeper, however, and for him who does not care to go to the trouble of manipulating his colonies for section-honey, the production of chunk-honey is an excellent thing.

Chunk-honey production has two distinct advantages—less labor is involved than in section-honey production, and less trouble with swarming. With any sort of hive it is an easy matter to supply a super of empty frames, having, except in the case of one or two, only narrow starters of foundation. One or two frames should be to a greater or less extent filled with virgin comb. Even without excluders a fair amount of honey will be obtained thus at a trifling cost, and with excluders the very choicest of honey will reward one's efforts.

Simple as such a method is, it involves more labor than many bee-keepers (more properly bee-owners) care for, and doubtless many a man would welcome a method which calls for almost no manipulation, and yet at the same time is attended by almost certain honey crops.

For some 6 years I have run a small apiary upon a certain hill in Norwich in which I term my let-alone hives. During that time only two swarms have issued so far as I know, and I have harvested an average of 50 pounds. Only one season proved a failure, and that was due to the bees suffering from pickled brood. Last year (1907) I harvested 600 pounds from the 10 colonies, and this year 550. I practice visiting this apiary twice per year for manipulation—once in the spring to see that each colony has a good queen, and once in the fall to take the honey. Sometimes the spring visit is omitted because of lack of time.

During the past year I have run some 60 of these let-alone hives, and harvested an average of 50 pounds of honey. I have not put in over 3 days of labor on these hives this year, aside from the time spent in caring for the honey. Having but little demand for chunk-honey I strain the honey to sell bottled. Strained from virgin comb it is the equal of the best extracted, and superior to most extracted honey.

These let-alone hives are extremely simple, though their construction involves certain fundamental principles which unquestionably have much to do with the success attendant upon their use. It is out of the question to give a minute description of these hives in this article, though I will mention some of their cardinal points:

The hives are roomy; they have the storage apartment back of instead of above the brood; they have ample entrances with space below the front frames; the frames hang parallel to the entrance; a sheet of excluder zinc separates the brood-chamber from the store-chamber.

Simple as this hive is in construction, it answers every need, and demands intelligent though minimum amount of care. I have run them now for 7 years, and each year I discover some simple improvement in construction or in manipulation. No time is used upon this hive in preparing for winter, for the hive is constructed with particular reference to the needs of the bee. If one is kept from visiting these hives for any reason, no serious harm would result if 2 or 3 years elapsed, barring the possible loss of the queen.

Think for a moment of going to one of these hives late in November and removing 140 pounds of good chunk-honey, the entire labor put upon the hive previous to that covering a period of time not exceeding 10 minutes. Last May I opened up one of my hives on Raymond Hill and noted that the queen was all right. I did not see the hive again till Nov. 27. Upon that date I took out 140 pounds of honey, most of it of the finest quality. This hive has 13 storage frames, each 13 x 17 inside measure, with an upright in the middle of the frame to prevent slumping of the comb in hot weather. In this case the 13 frames were full from top to bottom—26 beautiful chunks of honey, each 13 by about 8½ inches.

These hives are not perfect non-swarmers, but the swarming does not exceed 20 percent. It is far less than 20 percent in some apiaries, and 50 percent in others. I am hard at work solving the problem, and am fairly confident that I have solved it already. I hope soon to cut down the swarming to 10 percent. Of course, I do not see the swarms, and they go to the woods, and it is only by the condition of the colonies in the fall that I can judge of the amount of swarming.

Readers of the American Bee Journal can make no mistake in making up a few of these hives and setting them upon the farm of some friend where there is good pasturage and few bees.

Norwich, Conn.

"Survival of the Fittest"—Among the Bees

BY ADRIAN GETAZ.

Some time ago I found in a magazine, a paper on the West Indies. Among other things, was a statement to the effect that the bees introduced there, finding out that there is no winter, and therefore no need of making provisions, finally decide that gathering enough for the present needs is all that is necessary; with the consequence that the apiarist fails to get any surplus.

To me such statement sounds ridiculous, to say the least. I am more and more convinced that the bees, like all other animals, act through instinct. That instinct prompts them to do certain things when they are in certain conditions. But never mind. Let us suppose that the bees are intelligent enough to know that winter provisions are needed. How could they know that there is a winter coming? Those that passed through the previous winter died in the early spring. Three or four generations have passed away during the summer, and when the next winter comes, none of the bees living knows anything about it.

Assertions similar to the one above quoted have been frequently made, not only concerning the tropical countries, but even in regard to Florida or other places having little or no winter.

I do not know how much truth there is in those assertions. I do not know what causes the supposed laziness of bees in such countries. It may be that the temperature is too high to permit the bees to work during the largest part of the day. And it may be that, while the explanation given is wrong, it may nevertheless be true that the bees transported into tropical countries eventually get to be less active than those living where the winters are long, and provisions are necessary.

If it is, which, after all, is very likely to be so, it comes through the great law of Nature, called the *Survival of the Fittest*.

Take a temperate or cold country, for example. Suppose 2 colonies—one active enough to amass sufficient provisions to go through the winter; the other just active enough to make what might be termed "a good living." During the summer this latter colony would probably be the stronger. The bees being less active, and therefore less exposed, would live longer and therefore be more numerous. The queen not being hampered by an excess of honey in the combs, would probably lay more, and thus also add to the strength of the colony. But at last the winter comes, that colony dies for want of provision, while the other *survives*. The same process goes on from year to year, with the result that the bees of that country will be good honey-gatherers.

But suppose that these 2 colonies are in a country without winter. Then the second one, being the stronger, will have the best chance to live, and send out good, strong swarms; and in the course of time, the bees of that country will be a race gathering nectar enough to prosper and do well, but no more.

Many people in reading the above will say at once: What do I care about the "survival of the fittest" or the tropical countries? The honey, or the dollars that it brings, is what I want.

And yet there is a valuable lesson in it. It shows that the bees and all other animals and plants, and, even to a large extent, the human race, are what the conditions under which they live make them. It shows that like all the other domestic animals, the bees are, or might become, what we make or might make them. It shows the importance of proper management to obtain the qualities desired in our bees.

Knoxville, Tenn.

Views of an Indiana Apiary

BY CLARENCE WOOLBRIGHT.

I am sending some photos of my apiary, also of some appliances which I have found to be of much value to me while working among the bees.

Fig. 1 shows the apiary in the height of the honey-flow, with myself and family. In the shade in the left foreground can be seen 4 swarm-catchers, which have been of much value in swarming time. Two of these cages can be seen in Fig. 3, taken on a larger scale.

Fig. 2 shows the apiary just about the time the bees were finishing work in the supers. The colonies are not all shown in this picture, and they are not all shown in Fig. 1, as there were about 100 colonies at the time these pictures were taken.

PREVENTION OF INCREASE.

Fig. 3 represents 2 hives and 2 swarm-cages. The central hive represents a swarm just issuing. The one at the left shows a hive after it has been treated for swarming. At the right can be seen a swarm cage, standing on the open end, with its brace leaning against one corner, and 2 entrance-blocks at the other corner. These entrance-blocks are something like the Dudley blocks without the tube. The reader will notice that this picture was taken out of season, as will be seen in the background a part of a row of bees packed for winter. Therefore I can represent both in one picture. But we will suppose a swarm starting to issue from the central hive. The cage is put on close up to the hive and held in place with the brace as shown in the picture. While the swarm is coming out into the cage take a new hive-body filled with combs or foundation, and put on a bottom-board the size and shape of an escape-board. This board has a solid floor with an entrance at one end ⅜-inch by its full width (see hive at the left.) On top of this new hive-body place an escape-board. Now if the swarm has settled down in the cage, hive it in this new hive. Care must be taken not to leave the cage on the old hive too long, as the bees will go back into the hive. If the swarm

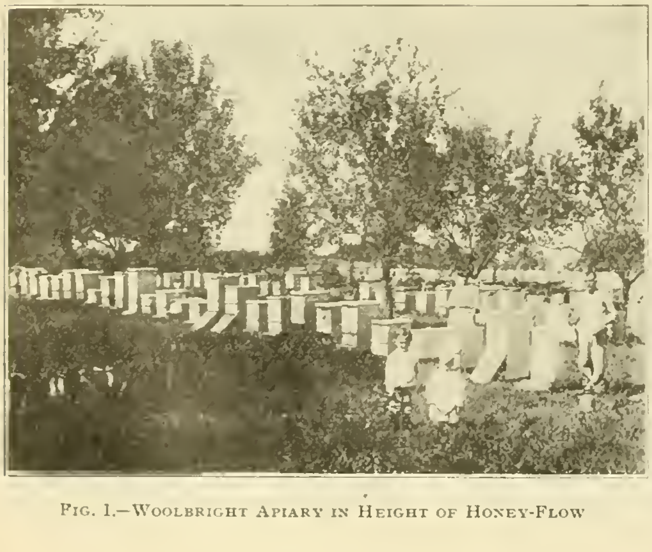


FIG. 1.—WOOLBRIGHT APIARY IN HEIGHT OF HONEY-FLOW

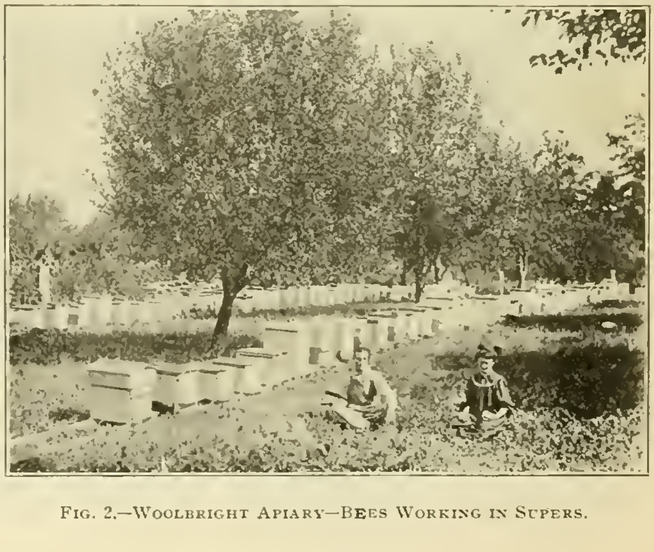


FIG. 2.—WOOLBRIGHT APIARY—BEES WORKING IN SUPERS.

gets into the cage before the hive is ready, pick the cage up and set it on the open end, as the cage at the right.

Now after the swarm is in the new hive, take an entrance-block and put it on the entrance of the old hive. (See hive at the left.) Turn the little piece of excluder to one side of the ¾-inch hole (which is the entrance) and leave it thus for 9 days. Now remove the supers from the old hive and set them to one side. Then pick up the new hive which has the swarm, and set it on top of the old hive. Now set the supers on top of the escape-board, which is next to the new hive. Then put up the run-way board and fasten it to the bottom-board of the new hive with small wire hooked over nail-heads, which are on the bottom-board and run-way for this purpose. (See hive to left.) In from 24 to 48 hours the escape-board can be removed and the bees will continue work in the supers.

The reason for using the escape is to keep the queen out of the sections, and to force the bees out of the supers into the new hive, so there will be a larger force of bees to draw out the frames of foundation.

At the end of 9 days turn the little piece of queen-excluder around over the entrance of the old hive, as there is danger of a virgin queen leaving the lower entrance, and going in at the upper entrance and causing trouble.

At the right, leaning on the side of the swarm-cage, is an entrance-block, showing queen-cell protector in place, which is also put on over the entrance at the end of 9 days. The excluder will prevent the virgin queens coming out, but will allow the worker-bees to pass. The cell-protector will also allow the workers to pass, never to return to the lower hive, but on returning from the field, heavily laden, must enter the top entrance, as the brood is now all sealed. The bees will all enter the top-hive, as fast as they become fielders. The run-way board is used to obstruct the lower hive-entrance, and to aid the heavily laden bees to gain the upper entrance.

In 21 days the lower hive can be removed and the new hive and its supers can be lowered down on the old bottom-board, and they will work on as if they had never cast a swarm. There will be nothing left in the old hive but combs, with a little honey, a few young bees, and a virgin queen; also some drones, if not liberated.

In the front row of hives in Fig. 1, can be seen 3 colonies treated in the way just described. This is a good plan to use when transferring.

There is another plan of preventing increase, which I have found to be of much value, which is as follows:

When the swarm starts to issue, cage it as stated above, and when it settles down in the cage, pull the cage back from the hive a little so it will be out of the way. Then remove the supers, set them to one side, and remove the brood-frames one at a time, and take out all queen-cells, return the frames, then put the supers back on the hive, then return the swarm. This operation is performed on all colonies as fast as they cast a swarm, throughout the swarming season. These cages have been a great help to me in the swarming season, as I had as high as 18 swarms in one day the past season. Had it not been for these cages there would have been a great mix-up, but by their use everything was in good order at the end of my day's work.

My apiary is run for comb honey. My total crop the past season was about 4000 sections. My customers call at my house, taking almost my entire crop.

Fig. 4 shows the apiary while the snow is on; also my method of wintering. The colonies are set in rows, the hives being about 14 inches apart, and are packed with straw, which is held in place by a sort of rack, and over the top of the straw is placed felt roofing to turn the rain. The packing is about 10 inches thick at the back of the hives. The fronts are left clear so the bees can fly at any time the weather is warm enough.

In the background of Fig. 3, will be seen a closer view of the bees packed for winter. The bees are left in their winter quarters till settled warm weather in the spring, when the racks are piled up out of the way, and the straw removed.

The American Bee Journal is a welcome visitor at our house. Many have been the good lessons which I have learned from its pages.

Elnora, Ind., Jan. 6.

Cost of Beeswax to the Bees

BY C. P. DADANT.

Should the bees be allowed to build the combs? Is there a waste of wax when the hive is supplied with already-built combs for the harvest? These questions, mentioned in the American Bee Journal for February (page 37) have lately been discussed both in this country and in Europe, with entirely different conclusions by different writers. The matter under study can never be positively decided, because of the different conditions in which the production of wax is carried on. Experiments on the cost of wax in pounds of honey have been made, and the amount of honey needed variously estimated at from upwards of 20 pounds down to 2 pounds for each pound of comb. The last-named estimate was given by a foreign writer who has so little practical knowledge of bee-culture that he condemned the use of the honey extractor as altogether impractical. On the other hand, the scientists who tried the experiments of feeding bees and found 20 pounds as needed to produce a pound of wax were doing this in too artificial a manner to secure as good results as must be secured in the height of the honey harvest.

It is evident to me that the amount of honey consumed in producing a pound of wax varies greatly, even in favorable circumstances, just as the amount of corn or cereals needed to produce a pound of fat in our domestic animals varies under different circumstances. This comparison is supported by most scientists. Cheshire compares the conditions necessary to produce wax to those needed by chickens to fatten—confinement, bodily inactivity, warmth, and high nourishment.

But must the bee produce a certain amount of beeswax whether she is willing to do so or not? In other words, must an amount of wax be produced, which if not used to build combs will be

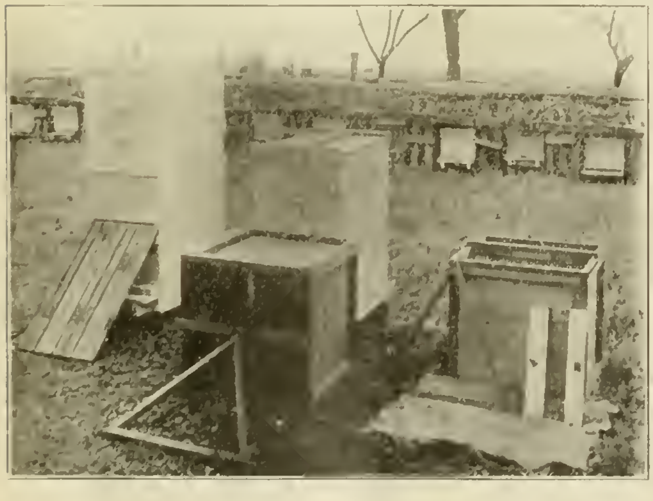


FIG. 3.—WOOLBRIGHT APIARY—TWO HIVES AND TWO SWARM-CAGES

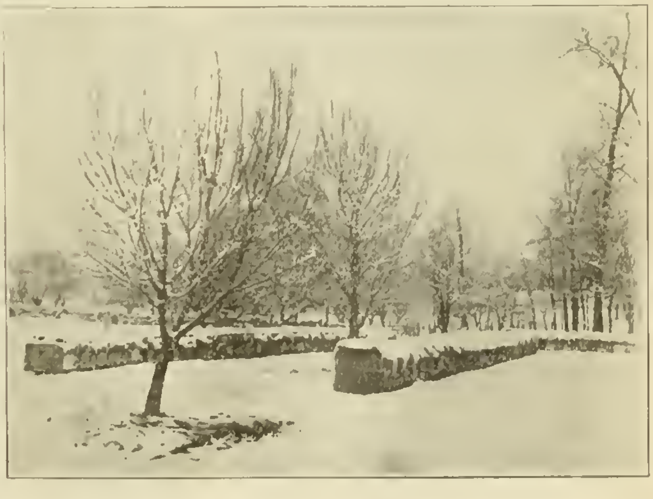


FIG. 4.—WOOLBRIGHT APIARY—WITH SNOW ON HIVES.

thrown away or plastered over the walls of the hive?

When the bees are filled with honey and have no comb in which to deposit it, there is no doubt that they hang in clusters, "in warmth and inactivity," until this honey is changed into wax. It was once believed that a certain part of the bees were "comb-builders," and that their sole occupation was to build combs; that they differed from the field workers in appearance, being larger in the abdomen and less active than the others. This was asserted by Huber, who, with the help of his faithful Burnens, made such accurate discoveries. But Huber had no means of discovering what was later ascertained by the introduction of the Italian bees, that those bees which he named "comb-builders" are the young bees before their first flight, and that these bees become field-workers in their turn. They are wax-workers when wax-producing is necessary at the time when they are too young to go to the field. But when the combs are full, from one end of the hive to the other, then all the bees must become wax-producers, as there is no other way for them to get rid of their honey.

Huber and others since have ascertained that all the bees are capable of producing wax when their honey-sack is full and cannot be emptied. It is also evident from the testimony of a number of writers that at the time when the adult bee is constantly carrying honey to the hive, the wax-producing organs are more or less active, and a small amount of honey is constantly being changed to wax.

In all my experience with bees, and while producing extracted honey, supplying the bees with supers full of empty combs already built. I have never seen the bees waste wax, except when the combs were full, and there was no more room to build other combs, and no full combs to seal. In one or two instances I have seen wax-scales wasted, but in each of these cases there was room to spare; the waste was caused by a sudden change of temperature, and I ascribed it in each instance to the inability of the bees to keep up the warmth of the hive, the scales of wax becoming too tough to be manipulated and had to be thrown away. Such instances are so rare as to be hardly worthy of notice.

When the honey harvest begins, and there is plenty of empty combs for the bees to store the honey, there is very little wax produced. That which is brought forth is used to lengthen the cells which have been cut down during the winter and spring while consuming the sealed honey, for any of our apiarists know that the cappings are cut away and wasted when the honey is used. So the bees repair their combs and "whiten" them—a process well known to both comb and extracted honey producers at the opening of the crop. Should we consider this whitening of combs as a waste? No, for the wax is placed where it serves the bees, and it is sufficient to say that they always do it, whether they have room for new combs elsewhere or not. But they *always* place honey in the cells, and have them fairly well filled before this whitening goes on.

I have never seen the bees build brace-combs except in too open spaces (in their judgment, evidently,) or waste wax otherwise by plastering it on the walls, as long as they had plenty of empty combs within their reach.

It appears to me that we can very easily reason the bees' action in comb-building. When the crop is light, their stomachs are never crowded. Only for a few minutes at each load does a bee find opportunity or desire to pass into the digestive organs more honey than is absolutely necessary for its sustenance. When it reaches the hive, and hands over its load to a young bee, the latter easily finds a storing place for it. Then there is no inducement for either of them to build comb or to consume honey in comb-building. But when the crop is well on, or sudden; when each adult worker brings home a full load and at once goes back for more, with all the eagerness of a miner who has found a fortune, then all the combs are soon filled. If the apiarist has not provided an extra supply, the young bees, after filling all the cells, have to retain in their honey-sacks as much as they can possibly contain, since the harvest keeps arriving from the field. Then it is that wax-production is not only welcome, but involuntary, for there is no other way, of overcoming the difficulty.

Every apiarist who has opened a crowded hive at the time of a sudden and plentiful harvest has noticed how full all the bees look, how sluggish they appear, hanging to each other in festoons, apparently idle, waiting for their honey to change into wax so that they may build more combs. Should there be no room for more combs, the wax would have to be wasted, unless the bees swarmed. This waste will not take place as long as there is a single cell to finish, a corner to fill, a cell to seal. Open a hive in this condition and supply it at once with empty combs and the conditions will change. You will immediately see a new activity. They deposit their honey and rush to the field again. Those that have produced wax-scales utilize them to repair the combs given them, as well as to strengthen these combs.

The evidence of the great cost of combs to bees is visible it seems to me, in the economy with which they build these combs. How light and fragile they are! If wax cost them next to nothing, they would surely build them stronger at first. But it is only when they handle over old combs that wax is added to make them strong—they add a little here and there. Is that wasted wax? Not by any means. If you are a producer of extracted honey, you know how much nicer it is to handle a comb which is several years old, for it is much tougher and less liable to break than the new combs just built.

In my experience, I have found no more waste of wax in the production of extracted honey than in that of comb honey. As long as your bees have room there will be no waste of material, but whenever the combs are full and sealed, and every space crammed, there is a chance for waste of both honey and wax, whether you are producing comb or extracted honey.

That the bees must produce more or less wax during a harvest does not admit of a doubt, but that they must produce enough wax to store all the honey they harvest, and that the supplying of combs already built is a waste, I cannot admit. Far from that, I hold that in locations where the harvest is sudden and very large for only a few days, there is a positive loss in compelling them to build their combs before they store the honey. In countries where the flow is gradual, beginning with a few ounces per day, increasing steadily to a few pounds, the loss from lack of combs is smaller. But when the honey-flow is delayed by unfavorable atmospheric conditions until the blossoms are in profusion and the harvest begins with a rush, there are days when the bees are actually compelled almost entirely to suspend operations in order to secure combs to store their crop. The loss is then three-fold. There is the actual cost of the wax in honey consumption; the loss of time to the bees whose abdomens are full and that cannot harvest more until they can unload; and the loss in breeding caused by the filling of all available cells with honey, in the brood-nest as well as the supers.

Some will say that such sudden crops are rare. Not in this part of Illinois. Our crops are sudden and short. We have weighed hives at times to ascertain the amount gathered each day, and we have several times noticed an increase of 18 to 19 pounds in one day. This weighing of colonies is not carried on as persistently on this side of the Atlantic as in Europe. The "Société d'apiculture poure la Suisse Romande" publishes statements every year of weights of hives regularly taken in different locations. Such a statement was published in the December number of their Bulletin, from 23 different localities. Those reports show plainly how sudden crops may be. In some instances crops of 11 pounds are recorded following a day of entire failure. In one instance there is a record of 9, 10 and 11 pounds of increase for 6 or 7 consecutive days. Bear in mind that these large crops are made with extracting supers filled with combs. I doubt very much if such crops would be possible if the bees had to build their combs, no matter how favorable the circumstances might be.

The reader knows that we are almost exclusively producers of extracted honey, but there was a time when we produced comb. I never could secure results at all adequate, when the bees had to build their own combs. At one time we had an apiary of 87 colonies with all supers full and the crop still on. We went to extracting and took off about 5,000 pounds in 3 days; at the end of the third day we examined some of the hives extracted 2 days previous and they did not have a single cell without honey. It would have been utterly impossible for those bees to gather the fifth of that amount if they had had to build the combs. Yet there was no waste of wax, because the bees were not compelled to retain honey long enough in their stomachs to digest it into beeswax. The production of wax was at its minimum, while if they had had to build combs it would have been at its maximum.

I have never heard of more than two

instances where it was found necessary and advisable to produce wax as much as possible. The first was reported by an apiarist of South America, living away from civilization with very inadequate means of transportation. He could not secure more than about 3 cents per pound for his honey, and found it profitable to have as much as possible of it converted into beeswax, by cutting out the combs and allowing the bees to rebuild. The other is reported by Dr. Phillips on Hawaiian Bee-Culture, "Bureau of Entomology, Bulletin No. 75", a very interesting report concerning the status of apiculture in Hawaii. It appears that the bulk of the honey produced there is from honey-dew of different kinds, but dark and of poor flavor. This is so inferior an article that Dr. Phillips suggests that it may pay to have this honey transformed into beeswax.

But in our case, I believe it pays to economize the wax as much as possible. I do not have very far to find corroborative testimony to support my view. In Gleanings for February 15, 1909, page 102, Mr. Louis Scholl narrates how he accidentally supplied a number of colonies with supers containing starters only, while a similar number of other colonies were supplied with full sheets, and the latter yielded a crop averaging $1.10 per colony more than the others, *after paying the excess of cost of the wax* supplied in the full sheets.

If the beginner will carefully take note of the above explanation and experiment for himself, I think that he will readily ascertain that we run no risk whatever of loss of wax as long as we keep the bees supplied with a sufficient number of combs for storing honey. The wax produced will just about keep pace with the lengthening of the cells to proper size, and the sealing of the honey as it matures.

Hamilton, Ill.

Double-Walled vs. Single-Walled Hives—Wiring Frames

BY WM. M. WHITNEY.

We often hear this objection to the chaff or double-walled hives: "They are not so readily warmed by the sun's rays in the winter and early spring as the single-board hive". The fact is, they are packed, and are kept at an even temperature, if the bees have sufficient supplies, and do not need the additional warmth of the sun; they are not affected so easily by the fluctuations or changes of temperature; not so liable to spring dwindling; breed up stronger in early spring; all of which reasons, it seems to me, commend them to any practical bee-keeper who winters his bees on the summer stand.

Again, the outside case protects the sections from the effects of chilly nights in June which so often happen, and which drive the bees from outside sections in supers on single-board hives thus retarding the work of comb-building which otherwise would have been carried on evenly throughout the entire super of sections.

Again, they are not so heavy or unwieldy to handle as many imagine—they are made of thin stuff, and while larger, are scarcely heavier than a single-board hive.

BEST WAY TO WIRE FRAMES.

In aswering the question which is so frequently asked as to the best method or wiring frames, the same old, antiquated method is often recommended—that of horizontal wiring, which is an absolute failure, so far as accomplishing the object for which wiring is done—foundation buckles just the same. The only successful method is by vertical wiring, or by the use of wood splints as recommended by Dr. Miller. When I see end-pieces to frames come all punched—well, I won't tell you just what I think—it wouldn't sound well.

The objection to staples, as mentioned in "A B C of Bee-Culture," doesn't count at all, even in the Hoffman frame. The slimmest wire brad of sufficient length, driven into the under side of the top bar at the outside edge of the foundation groove and from which, by the use of a pair of round plyers little hooks can be quickly made, and which do not obstruct the insertion of the foundation in the least, is the neatest thing imaginable to loop the end of the wire to; thence, to a corresponding hook in the bottom-bar, but of shorter length, and driven from the under side; thence, zigzagging up and down till about 2-3 of the central portion of the space is occupied—say 5 or 6 wires. With this arrangement, properly done, there will be no buckling of the comb.

Rather than use horizontal wiring, I'd use foundation heavy enough to need no wiring—medium brood. I think it would be all right for standard Langstroth frames. By my method of wiring I have produced, as an experiment, good combs from extra thin super foundation, such as is used in sections. Light brood 10 sheets to the pound, with the above method of wiring, is quite a saving of expense over the use of medium brood of 6 to 7 sheets to the pound.

Evanston, Ill.

Proposed California Apiarian Legislation

BY RALPH BENTON.

In charge of Apiculture, University of California.

On page 107 of the issue of Gleanings in Bee Culture and on page 45 of the American Bee Journal for February, I note discussions of the proposed amendment to the California statute law relative to foul brood and other diseases of bees, now pending in the California legislature. The main trend of these discussions is correct, but there are certain misapprehensions and interpretations that I desire to clear up in the minds of the bee-keeping public.

In the first place, when attempts are made to discuss or interpret the California law, or the amendment in question, it must be borne in mind that our law relates not only to foul brood but to all of the brood-diseases of bees, and also to the diseases of adult bees commonly and collectively called paralysis. Keeping this steadily in mind, let us consider some of the questions raised in the discussion referred to.

First, the statement is made in Gleanings that the amendment provides for a "University Inspector of Foul Brood." This is but a slight error in name, but I desire to correct it for the term so used is misleading. What the amendment does provide for is a State Supervising Inspector of Apiaries who shall be Apiarian Pathologist of the State Agricultural Experiment Station, an institution separate but closely connected with the University. Note that this officer is an "inspector of apiaries" and not simply a foul-brood inspector. This is true of all of our county inspectors under the present law—they are "inspectors of apiaries," and as such inspect and treat for not only foul brood but all of the other maladies of bees. As Apiarian Pathologist the State Supervising Inspector of Apiaries will conduct investigations in the diseases and other enemies of bees, and undoubtedly, ranking an Instructor in Apiculture in the University, it will fall to him to conduct such courses of instruction as are given in the College of Agriculture in the diseases of bees.

Now coming to the main point around which most of the discussion pro and con has centered: I refer to the section relating to the importation of queens into California. There are two things that must be remembered when discussing this section: Firstly, the section in question relates to the importation of queens not only in ordinary mailing cages but also queens in "nuclei" or "swarm boxes;" and, secondly, that the whole law relates in all of its applications not only to foul brood but to all brood-diseases and also to the diseases of adult bees, or paralysis. The exact causes of certain of these diseases is not known, but there seems to be an overwhelming evidence pointing to the fact that those known as pickled brood and paralysis are in some way directly connected in transmission and spread through the queens. Time and again have these diseases been introduced into apiaries previously free from disease through the agency of an importation of queens. Time and again have partial, and in some instances in certain of these diseases a permanent cure, resulted from requeening with fresh and uninfected stock, the apiary so infected.

When I refer to these diseases which in certain portions of the United States do not flourish and in many sections are minor maladies, an adequate appreciation must be had by the bee-keeping public of the virulence and the extent of the ravages of these same diseases as transplanted and permitted to flourish under California climatic and other conditions. In some localities so-called paralysis is much more dreaded than foul brood, and rightly so, if we are to judge from the havoc wrought by this baffling disease. The writer has been in apiaries in which all of the flight bees have been taken off and hive after hive so decimated in numbers that brood-rearing operations were at a standstill for lack of bees and stores to proceed on. In passing down the rows of such an apiary, from a pint to two quarts or more of dead bees could be scraped up in a pile in front of each colony, and hardly a place to step without crushing a struggling and diseased bee. If foul brood is an insidious disease, in that it cuts off the supply of young bees, paralysis is just as insidious as far as practical returns are concerned, in that it takes off all the flight or working bees.

So much for the basis upon which the bee-keepers of California have seen fit to include in their proposed law a section relative to the importation of not only bees, but specifically queens as well.

Now a few words in regard to the possible interpretation of the law: The proposed measure is very clear and definite in its statement. There is nothing in it relative to the inspection of queens either at the post-office or at an express-office. There is nothing in it, in fact, binding an immediate inspection of queens upon their arrival by the inspector, unless the inspector so desires to rule. What the section in question does provide is, first, that all queens introduced into the State of California, or from one county into another county within the State, without a clean bill of health, are so introduced at the risk of the consignee. If the consignee does not wish his property endangered, and to make himself liable for the importation of uncertified bees, immediately upon the arrival of such consignment of bees he is required to notify the inspector of apiaries, holding such queens subject to his orders. With the sanction of the inspector the queens may then be introduced into the apiaries of the consignee, and kept under observation for a period of not less than 60 days, at the end of which period, if no disease has developed, the queens may be pronounced free from disease, and then, and only then, lawfully introduced. This in no way debars the sending of queens into California by an Eastern breeder, and as Mr. Root has repeatedly asserted, works no hardship there, as Mr. Pryal anticipated might result to Eastern shippers of queens. And, further, California bee-keepers do not, as Mr. Root anticipates, feel it a hardship at their end of the line, since it is with the California bee-keepers that the proposed measure emanated, and who have been supporting it with an overwhelming majority, quite unanimously, except in a few quarters. As I have repeatedly pointed out, the real burden would lie with the inspectors of apiaries by increasing their duties; but the California bee-keeping public seems willing to increase this line of work in its united effort to restrict and eradicate bee-diseases locally, costing the honey industry annually in the neighborhood of $250,000 to $300,000.

If an aggressive campaign is to be carried on, all possible sources of infection must be guarded, and the great advantage accruing from a system of complete inspection including queens is being able to locate definitely, if possible, the sources of constant re-infection, and concentrate a united effort upon these sources, and so solve the problem, the immensity of which, relatively speaking, few bee-keepers realize. We believe that suppositions or possible interpretations of the law are endless, and in general lead to nothing, and are more of the opinion of Mr. Pryal, that the law framed in the best interest of all should pass, and if in interpretation it is ineffectual it can then be changed and strengthened to suit the situations that may arise in the future.

Berkeley, Cal.

Buzzings From the Clover Field

BY CHAS. M. HIX.

White clover is getting to be the greatest honey-plant in the United States. I believe no other honey-plant yields so much surplus under the same conditions. If a larger kind with the short heads could be produced, the farmer could be persuaded to sow it for hay. Why does not Mr. Burbank attack that problem?

"Wherever a farmer or dairyman or horticulturist can make a living, a bee-man can," says the Modern Farmer and Busy Bee. There is a great deal of truth in that statement, and it gives encouragement to those who are compelled to stay in the location they are in. The best advice to the man who contemplates looking for a new location in another part of the country, is, "Stay where you are."

While bee-keeping is comparatively a new business when compared with the other branches of agriculture, I believe the bee-keepers are the happiest of the lot.

Fully 75 percent of the bee-keepers are photographers. Ought not the other 25 percent to be? Almost every one who can make a success with bees, can be a successful amateur photographer. It does one good to see a bee-yard like that of Mr. W. W. McNeal, on page 7.

A good way to promote the sale of honey near home is to have a public field-day, to which the public is invited, say one day every two weeks. Nothing makes the people want honey so much as when they see the real process of production. But very few people have any idea how much comb and extracted honey is taken from the hives and prepared for market.

Mr. L. W. Benson, page 25, says, "I am not a bee-man," but I wonder if that is not what the neighbors call him. The name is really earned by one who has so much experience, and more—he's not afraid to tell it to others.

Some bee-keepers say it harms bees to move them in mid-winter, but if it is done on a warm, sunny day, it does no harm. I moved a colony of bees in December, 1906, and the next season they were the best in this locality.

While wrapping hives with tar-paper outside the packing may do sometimes, a dry-goods box covered with felt roofing, with packing inside of the box, between it and the hive, is far ahead, and is the cheapest in the long run.

It is not the intelligent farmer-bee-keepers who injure their neighbors, but the wilfully ignorant ones. Those who are successful in other lines, will not generally object to subscribe for a bee-paper.

While the bee-moth is an enemy of bees, I sometimes think we should be thankful for some of its work, because when the larvæ of the beeswax-moth get to work in some box-hive apiary, the owner will begin to "sit up and take notice" of more modern hives.

Why should we use glass in comb-honey shipping-cases? Other food-stuffs are not shipped in glassed cases. Why not just have a few for exhibition in the stores, and the rest plain boxes without glass?

Fellow bee-keepers, let's not prophesy what next year will be, but get ready for a big yield. If we are disappointed, then it will be time to complain. The honey crop for next year is not in our hands, but in the hands of Him "from whom all blessings flow." Although, of course, we can by intelligent labor, make a great difference.

Did you ever notice that bee on the front cover of the "Old Reliable?" Well, in the circle around it are the words, "Our toil doth sweeten others." Why should not this be the motto of the bee-keepers as well as the bees? Let us look up and lift up.

Hampshire, Ill.

Comb Honey and Digestion—Bee-Keeping in New Mexico

BY J. E. JOHNSON.

I have read with much interest the controversy between Dr. Miller and Dr. Bohrer as to whether honey in the comb is injurious to digestion, and whether extracted honey is to be preferred. Probably it is very presumptuous for me to "butt in," especially where two men (and let me add, both good men, and well-informed on scientific things) are crossing swords, but please let me just this once give my views.

Dr. Bohrer claims that the comb honey contains poison deposited there by the bees from their stings, and that extracted honey is free from this. Now, Doctor, what is that poison? Have you analyzed it? The poison from bee-stings that causes our eyes to "button up" when we are stung is not formic acid, but is the toxin, or elements of the decayed or used elements in the bee's body. This substance is not of a volatile nature, and thus the honey does not absorb it, but the element we find in honey that makes it an antiseptic, is formic acid, which is also a product of the bee. Formic acid is very volatile, and as honey has strong chemical attraction for things of gaseous nature, the honey attracts the formic acid, and thus the honey absorbs this acid while ripening before it is sealed. Most of this acid is absorbed by the honey from the bees at the entrance when fanning a current of air through the hive to ripen the honey. The acid from their stings is absorbed by that current of air, and is, by the affinity of this honey, absorbed by the honey. The wax has nothing to do with it. Formic acid is poison somewhat of the nature of salt. Salt taken in large quantities is poison, but is beneficial when taken in the right proportion. So is formic acid.

An all-wise Creator provided that the bee should make a perfect sweet in the proper manner, not interfered with by the cunning of man, but the extractor is man's invention, and does not add to the value of the food, but to the convenience of handling the product.

I would much rather produce extracted honey, and here in New Mexico I find that the production of the extracted honey is especially to be preferred, as cool nights hinder comb-making, and I have been very sorry that I did not take all my empty combs with me from Illinois. But I find that here, as elsewhere, the people prefer comb honey. So I say, as I have said before, to all, produce as much extracted as your market will take at a good price, and educate people to use more of the extracted article; but when you have a good demand for comb honey, supply that demand with the finest and cleanest that you can produce. Both comb and extracted honey are good and wholesome, and people should use more of it. That can't be disputed. But to induce people to use more of it, you should supply what they want; but whenever you influence people against either comb or extracted, you hurt the sale of both.

So far I find that our mesquite is our best honey-plant here, better than our alfalfa. Mesquite grows only from about 12 inches to 3 feet high, but I almost had a bad attack of the old-fashioned bee-fever when I found that bees came in loaded with fine nectar from this mesquite for 6 weeks. In fact, it was almost equal to a good white clover flow for 6 weeks. But what gave me the attack of the old-fashioned bee-fever was the fact that I had been able to purchase only one not very strong colony to meet that honey-flow. And what was worse, one day when I was not near, they swarmed, and about 2 barrels of water thrown among that swarm would not convince them that the J. E. Johnson Apiary was the only place on earth for them to locate, and they pulled for the Guadaloupe Mountains 60 miles away. I have never heard from them since, but hope they are enjoying their new home.

However, I built up 3 colonies from what I had left, without any feeding, but got only a little surplus.

I find that alfalfa does fine here, and we cut 4 to 6 times during the season, but the second and third crops are about the best honey-yielding cuttings. I found that alfalfa one year old, in bloom nicely in August, did not attract a single bee, but older alfalfa had a good number of bees working on it.

Here we have little or no rain in April, May and the first half of June, and as alfalfa begins blooming in April, it yields better during those dry months. Not only so, but you can't raise alfalfa seed successfully after the rainy season begins. We call July and August the rainy season, because there are thunder showers within sight of us 3 or 4 days out of every week, and occasionally we get a shower, and sometimes a good, heavy down-pour. But the larger portion of the showers are near the mountains. After these rains begin seed does not form well, neither does the alfalfa yield much honey during those months, so I will have to change my views about Illinois alfalfa yielding honey.

I have alfalfa growing luxuriantly in ditches where water has run 6 to 12 inches deep for two weeks at a stretch. It seems you can hardly drown alfalfa, if it has just its head above water, but if you cover it with water so that the top can't get air, you can drown it, but not very easily. So I would say to Mr. Dadant, you never had it too wet in Illinois for alfalfa. But alfalfa is a high-altitude plant, and I think the high altitude with the very powerful absorbing atmosphere, is necessary for alfalfa to yield nectar well.

You people in the low altitude don't realize how absorbing this atmosphere is. You can bring a brand new wagon from Illinois here in March, and in May every tire will fall off. After the wheels have shrunk and the tires are rusted they are all right. A woman with a long clothesline, as she hangs out her washing, can begin to take clothes in in 15 minutes after hanging them out, beginning at the first end of the line. So conditions are very different here.

I succeeded in raising a fine patch of alfalfa in Illinois, but it did not yield honey. Prof. Hopkins wrote me that as yet he had failed to get a seed crop. So while irrigating does not stop the forming of seed in alfalfa here, rain does. However, alfalfa that is intended to produce seed, is not irrigated as much, but is left pretty dry. Now if during our rainy season we can't produce alfalfa seed and not get much honey from its blossoms, I think you may expect to get honey or a good seed crop only in very dry years, or when it happens to be very dry during blooming time. I find that this mesquite, although it is of very hard wood like hedge, the roots are very large, sometimes 6 inches or more in diameter. The top is only like a bush, but it belongs to the legum or clover family, and thus it is related to alfalfa, and the soil has bacteria that work on alfalfa roots and alfalfa does well, because the same bacteria work on the roots of both.

We have lots of flowers growing wild all summer, and especially in the fall and late summer. I can not name them very well. Fruit-bloom is of 3 or 4 weeks' duration — apricots, peaches, pears, plums, and apples of large orchards, from 100 to 200 acres; and as mesquite comes at the close of the apple-bloom, I consider it the most valuable as yet. There are hundreds of acres of mesquite, but as the country improves, the mesquite will grow less and alfalfa more. So far mesquite is old, and the greater part of the orchards and alfalfa is young. I think alfalfa improves in yielding honey, as it grows older.

The ground does not freeze in winter, but vegetation stops growing. There is a little ice occasionally in the mornings. Bees fly nearly every day all winter, but as yet have consumed very little honey. The winters are dry, and bees winter fine.

This is the greatest place for automobiles I ever saw. The roads are always fine and often dusty. There is a livery barn that has no horses—just automobiles. I have not yet been to the mountains. The Guadaloupe (pronounced Waluppe here) Mountains are 60 miles away, where there is much timber, some trees being 3 to 4 feet in diameter. I have no doubt there are some bee-trees there. New Mexico is an old settled country. The house in Sante Fe in which Gov. Curry lives, was built in 1605, and is still in a good state of preservation. Many years ago when Gen. Lew Wallace was Governor of New Mexico, he lived in this house and wrote "Ben Hur." The writing of "Ben Hur" was the means of the writer's conversion from a disbeliever to a Christian. Just think of a house still in good use that was built 2 years before the Jamestown, Va., colony was established! We hope to get State-hood soon.

I shall get more bees this spring.

Dayton, N. Mex.

Foul Brood—How to Treat It

BY M. M. BALDRIDGE.

Manager N. E. France has sent me a copy of the proceedings of the National Bee-Keepers' Convention held in Detroit, in October last. On page 72, I find the following in regard to foul brood, credited to R. L. Taylor:

> "If your colonies are strong there is a way to get rid of foul brood without much danger, and, I think, with perfect safety so far as the new colony is concerned, and that is Baldridge's plan of using a bee-escape. You prepare a hive for your colony with starters or foundation, and place it upon the stand of the colony that has the foul brood, setting that one a little aside, putting the entrances as nearly together as possible; then take into the new hive with the queen, to make a start, sufficient bees to take care of the queen at least and then put up a bee-escape upon the front of your hive, having it in every other way perfectly bee-tight. Then you have nothing more to do but to let the bees come out of themselves through the escape, and if you place the escape properly they cannot return to the foul-broody colony, but will go into the new hive. Mr. Balridge uses that plan, and says it is always successful. I have used it in several instances, and have found it successful."

The foregoing, I suppose is word for word as reported by the stenographer, and may not be exactly as Mr. Taylor gave the plan, or desired to give it. This is why I stated in the beginning that the plan is credited to Mr. Taylor. I am pleased to learn that Mr. Taylor found the plan he describes successful in treating foul brood, but I would not be willing to advise any one to treat the disease exactly in that way. I never take the queen and some of the bees away from the foul-broody colony to start the new colony, and I see no necesity of doing so in any case. I prefer to start the new colony by taking a comb of brood with the adhering bees from a *healthy* colony , and giving them the queen from the diseased colony in one or two days thereafter. I want the queen to remain in the diseased colony, caged, and the cage placed on top of the frames where she can be got at with the least trouble, so as to be given to the new colony at the proper time. I want the queen to remain as stated so the bees therein will not become excited as when they find themselves queenless. If the new colony is started in the forenoon, or when the bees are busy at work, a good time to remove the queen and let her run in at the entrance of this colony is on the following day, and near sundown. I also prefer to face both colonies in opposite directions. That is, set the prepared hive on the foul-broody stand with the entrance the same way, turn the diseased colony halfway around. and leave the entrance open.

I do not find it necessary to use the bee-escape at all when treating a number of colonies, except in the final wind-up. The bee-escape is of minor importance in treating foul brood by my plan. The main thing is to compel the bees in the diseased hive to transfer themselves to the new hive without taking with them any diseased honey. They will do this by manipulating, as I have stated. Several diseased colonies, if they exist in the apiary, may be treated in the same way and at the same time. Then in the course of a week or 10 days the diseased colonies may be consolidated by piling them up 2, 3, 4, 5 or more stories deep. Then by using a bee-escape in front of the bottom story, and locating the combination by the side of a weak colony, when they go out for any purpose, they will be forced to go into the other colony.

There are divers ways to manipulate the diseased colonies, but it is unnecessary for me to describe them all. The getting rid of foul brood by my plan is so simple that almost any one can treat the disease successfully.

I wish the reader would try my plan and then report. If you wish more light on this topic than is outlined in the foregoing, please read my directions more in detail on page 205 of the July issue of the American Bee Journal for 1908.

St. Charles, Ill.

[In order that our readers may have Mr. Baldridge's plan of treating foul brood right at hand, we have decided to reproduce it once more, as follows: —EDITOR.]

BALDRIDGE PLAN OF TREATING FOUL BROOD.

The Baldridge plan of treating a foul-broody colony successfully is as follows:

1st. Open the hive of the diseased colony and cage the queen. The best time to do this is late in the afternoon or near sunset. Place the caged queen in the top of the foul-broody hive, and where the cage can be got at with as little trouble as possible.

2d. Bore a small hole—about one inch in diameter—in the front end of the foul-broody hive a few inches above the regular entrance, and fasten over it on the outside of the hive a Porter bee-escape. After the bees are through flying for the day turn the foul-broody hive half way around so the bee-entrance will face the opposite direction.

3d. Now go to some healthy colony and select one or two combs of brood well covered with bees, and place them in an empty hive and fill this hive with empty combs, frames of comb foundation, or empty frames, and set this hive on the stand of the diseased colony. The rear ends of both hives will now touch each other, or they may be a few inches apart. Now leave the hive thus, for say 2, 3 or 4 days, or long enough for the outdoor workers in the foul-broody colony to return to their old location. This they will do, of course, and they will then remain in the new hive, having one or two combs of healthy brood.

4th. Near sunset of the second or third day take the caged queen away from the diseased colony and simply let her run into the entrance of the new hive.

5th. Now close the regular entrance of the foul-broody hive and all other exits except the one through the bee-escape. Then gently place this hive by the side of the new hive and close to each other, the closer the better, with both fronts facing the same way. Thereafter the bees that hatch or fly out of the diseased colony must pass through or out of the bee-escape, and as they can not return they must and will go into the new hive. By this means the new hive, in the course of 3 or 4 weeks, will secure all, or nearly all, the bees and brood that were in the diseased colony, and during this time, or for any length of time thereafter, no robber-bees can gain entrance there and carry away any diseased honey.

This plan of treating foul-broody colonies prevents all loss in bees, honey, or the building of new combs, and is a simple and practical way of treating the disease. In some respects the plan is a far better one than any other I have seen described.

My plan may be carried out in divers ways, but it is not always best to describe such and thereby confuse the reader. The entire plan is based upon the well-known fact that foul brood is a *germ* disease, and that the germs may be taken into a new hive by the bees filling their bodies with the diseased honey deposited in the foul-broody hive. The disease may likewise be taken into the new hive by the *nurse-bees*. My plan does away with all such danger, for when the diseased colony is left undisturbed over night the bees re-deposit all their honey, and on going out to work the following day they go out with empty bodies and return with healthy honey. All the *nurse-bees* will remain in the diseased colony, and before they pass out of their hive through the bee-escape all germs in their bodies will have been disposed of in nursing the uncapped brood in the foul-broody colony.

My plan of treating foul brood is not exactly a new plan, as it was outlined by me in 1897, page 333, in the Bee-Keepers' Review. Since that date I have treated a number of foul-broody colonies by my plan, and always with good success. I am advised that others have done likewise.

M. M. BALDRIDGE.

UPPER FIG.—HONEY-HOUSE OF C. I. GRAHAM, SET UP FOR OPERATION.
LOWER FIG.—HONEY-HOUSE OF H. T. CHRISMAN, AND EXTRACTING CREW.

Honey-Houses in California

BY CHAS. TROUT.

It is by the means of the movable honey-house that our specialists extract such enormous amounts of honey. I will describe 2 of the most successful houses I have seen:

The upper figure is the extracting house of Mr. C. I. Graham. It contains 2 4-frame extractors, and 2 capping tanks. The honey runs direct from the extractor through pipes to the tank on the outside. The house is built on the bed of a strong wagon, with burlap sides and tar-paper roof. It can be drawn easily by 2 mules from yard to yard.

The lower figure shows the crew and extracting house owned by H. T. and J. Chrisman. This house is quite different than Mr. Graham's. A space only 5 feet by the width of the wagon is used for extracting purposes. It contains only one extractor and uncapping tank. The honey is lifted into the house instead of carrying it on wheelbarrows. The remainder of the house is used as a dining room by the men and a bedroom by the owner and wife, and is partioned off from the rest. It has screen halfway down each side and canvas flaps, which enable the operators to have plenty of ventilation.

The illustrations show many other conveniences

Redlands, Calif.

Sweet Clover as a Honey-Producer

BY ISAAC F. TILLINGHAST.

During the past season I have been traveling quite extensively through several different states, visiting bee-keepers, and noting the comparative results, under different kinds of management, and in different locations.

One fact forcibly brought to my attention by this inspection of localities was that the most profitable apiaries I found were in sections where large quantities of sweet clover were found growing in vacant lots, along railroad embankments, and in fact wherever it had been able to gain a foothold.

So striking and remarkable were the results in some of these cases that I became convinced that this plant is really one of the most valuable sources of honey that we have in this country, and in order to try and profit by the discovery, I procured 100 pounds of the seed which I have been quietly scattering in every possible nook and corner within a mile or two of my apiary.

I think that the chief value of this plant, over many others, lies in the fact that it continues in bloom for so long a time that it bridges over the periods of dearth between our natural supplies, and furnishes a great amount of nectar when the bees otherwise would have nothing whatever to keep them busy.

And again, unlike buckwheat, and some others, which seem to supply only during the early part of each day, sweet clover will be found covered with bees from early dawn till dusk, day after day, from July to September.

One peculiar thing about sweet clover is that it will grow rampantly in new railroad cuts and embankments, consisting of sand and gravel, or rock and hardpan, which contains no humus or soil of any richness which would support any other kind of plant, and as it has the property, like other clovers, of gathering nitrogen and feeding it to the soil in which it grows, it is no doubt one of the greatest soil-improvers in existence, and well worthy of a place on every farm for this purpose alone.

I have a five-acre field of old wornout farm land which I am seeding to this plant which will be allowed to remain undisturbed for several years for the double purpose of improving its fertility and at the same time supplying bee-pasturage.

The Mohawk valley, in New York State, through which runs the New York Central, the West Shore, and various trolley lines of railroad, as well as the canal, has many pieces of company land lying between these thoroughfares, which through disuse have become seeded with sweet clover, both white and yellow, making an aggregate of hundreds of acres between Albany and Syracuse, and I found that bee-keepers in this belt were invariably securing larger returns from their apiaries than any in sections not covered with this plant.

Right in the city of Syracuse are a number of large apiaries which are making almost phenomenal records which I attribute almost entirely to sweet clover which is scattered all around the city on vacant lots, parks and street ways. One instance I may mention was the case of Mr. F. A. Salisbury, who showed me hives from which he stated he had taken an average of 266 pounds of box honey during the past season.

I think that the same condition exists in some of the suburbs of Chicago, and if so I am led to ask why we do not hear more about the value of this plant? Is it because those who have it and know its great value wish to keep "mum" and profit by their knowledge rather than publish it to the world?

I, for one, shall be pleased to hear from any person who is in position to say anything either for or against it.

Factoryville, Pa.

Comments On Several Topics

BY HARRY LATHROP.

My bee-keeping life has been spent entirely in the great white clover belt of Southern Wisconsin, and of course I look at bee-keeping from a different point of view from some whose fields and resources are far different.

My advantages are an unlimited field during good seasons, a grade of honey that is the standard for the whole world, and record yields during good seasons. My disadvantages are crop failures, owing to the occasional failure of the white clover crop, and a climate in which it is necessary to house or otherwise protect bees in winter. These two objections have, I believe, prevented a great many from going into the business of bee-keeping in this part of the country.

It requires years of study to be able to contend with the conditions, and work bees here at a minimum of expense and obtain the maximum of yield.

I have two yards at present—one on a strictly clover location, and the other here on the Wisconsin river where there is the chance of an occasional crop of very nice fall honey.

This year (1908) after the white honey was all through, I secured 2000 pounds of buckwheat, golden-rod blend that is about as nice as any good maple syrup for pan-cakes. I always ask the same price for such honey that I do for the best white clover and basswood, as there are some who prefer it. I also find that the amber honey of this region makes good winter stores, being, as a rule, well ripened by the close of the season.

Late Extracting of Honey.

The dark honey mentioned above was not removed from the hives until it was too late to extract without artificial heat. I have a small building that I use as an extracting room. I would carry in enough combs for an evening's work, start a fire in a cheap sheet-iron stove of the air-tight variety, and by 8 o'clock, when I am through with my other work, the honey would be nicely warmed through. I would then extract, sometimes as late as midnight. I have had no trouble to extract honey even in winter by using proper heat, but I would not want to depend upon any sort of an oil-stove. I use a capping melter run with a common gasoline jet, and it does the work in such a satisfactory manner that I will probably never go back to the fussy plan of keeping a lot of cappings on hand to drain out and take up room until rendered by the usual process.

Rendering Combs Into Beeswax.

I never learned anything about wax-rendering until the last year. My wife always made the wax on an old cook-stove, using a common wash-boiler. I think she got at least two-thirds of the wax, and the balance was lost. But we live to learn, and so one day I shut myself up in the little shop and melted up a lot of combs and scraps, using my new Hatch-Gemmill press. Now I know how to render and get it all, except, perhaps, a very small percent. It is not hard to learn. You want a warm room, plenty of hot water, and some nice, loose-woven burlaps for making the cheese in. However, I have not yet learned how to refine wax so as to get large cakes of the pure stuff. I suppose the comb foundation makers have very good facilities for this purpose, and I have been sending them some of my wax in the rough and letting them refine it. It is a safe thing to do when you are dealing with such honest, faithful men as we have in that line of business.

I would like to see an article on refining wax, by some one who has the thing down to a fine point. I think probably Mr. C. A. Hatch could make the matter clear, and no doubt there are many who would like to have his instructions. If I were to make a guess at what would be a good method, I would say, re-heat the wax that comes from the press or from the solar extractor, in deep cans or pails; allow it to stand quietly in a melted condition, and dip off the top into clean moulds. Put in more unrefined wax, heat up and dip again. Am I correct?

My bees went into winter quarters much heavier in stores than last year. The few light ones were set to one side in the cellars and I will place on them supers containing some No. 2 section honey. That is about all the use I have for sections.

Retail Prices for Honey—A Rap at Glucose.

At one time I made a specialty of fancy comb honey, but of late I always think it is produced only at a loss here. The trouble is that the price of comb honey is down so near what I can get for good extracted honey in pails that it doesn't pay to bother with it. My principal package is the 10-pound pail, which I sell at one dollar, and "Jones," or whoever else buys the honey, "pays the freight." My wholesale price for honey in 60-pound cans is 8 cents, and I get it, too.

Now if all bee-keepers would demand these prices, which are very reasonable, they could get them. At present the large dealers and cracker factories are offering only 5 cents for honey. But after all. the great enemy of our industry is glucose. Go into any country or village store, and you will probably find a small amount of honey on sale, and as much as a dray load of pails containing the so-called corn syrup. My friends, are you aware that this stuff is not fit to eat? Then what are you doing to educate your people in reference to sweets for the table? I tell my people it is all right to use pure sugar syrups if they prefer them, and I think that only such should be allowed on the market. If we could handicap glucose as manufactured butter was handicapped by the dairy-men, you would see a different state of affairs in the honey-trade.

It is not appetite but greed that causes such an immense sale of glucose syrup for table use. The men who make it are actuated only by greed of gain. I have talked with several people who have worked in glucose factories and they each and all say that they would not think of eating the stuff. Some of these are good honey customers. Cheap boarding houses use it, again from motives of greed, and last, but not least, farmers who have hired hands to feed. Well, there are some farmers in this part of the country who would not carry such stuff into their houses, and among this class I have my best honey customers. A man who puts honey on the table for his hired help will lose nothing by so doing. They will appreciate his desire to give them good food, and work all the better to his interest.

On the other hand. there is nothing that will more quickly advertise the cheap, second-class quality of a public house than the use of glucose on the table in the place of honey or pure syrups.

Bridgeport, Wis., Dec. 12, 1908.

The Care of Extracted Honey

BY DR. E. F. PHILLIPS

In charge of Apiculture, Bureau of Entomology, Department of Agriculture, Washington, D. C.

I was recently asked by the officers of the National Association to prepare a paper for this meeting. However, owing to the shortness of the time after the request came, I was unable to prepare a new paper, but agreed to read a part of a paper which I had prepared for publication on the production and care of extracted honey. I shall omit the first part of this paper which deals with the production, and shall read only the portion pertaining to the care of the honey after extraction. The entire paper will be published soon as a part of one of the bulletins of the Bureau of Entomology.

The Ripening of Honey.

When nectar is gathered from flowers by the worker-bees, the amount of water contained in it is very high. It is generally supposed that, by the time bees reach the hive to deposit the nectar in the cells, part of this water has been removed; at any rate, during the process of ripening, the amount of water is very much reduced, until, in thoroughly ripened honey, it will not exceed 25 percent and is generally not more than 20 percent. Some very ripe honeys will have as little as 12 percent of water in them. If more than 25 percent of water remains in the honey at the time of extraction, it will probably ferment.

The ripening of honey consists not only of the evaporation of the surplus water of the nectar, but especially of the transformation of the sugars of the nectar into the levulose and dextrose of honey. Unripe honeys contain a larger proportion of sucrose or cane-sugar, and it is probable that the longer the honey remains in the hive the less of sucrose will be found in it. While honeys vary all the way from zero to 8 or 10 percent in their sucrose content, the purest honeys are those which contain the least. The official honey standard of the Association of Official Agricultural Chemists allows 8 percent of sucrose in honey.

It is the policy of most bee-keepers to allow this ripening to take place in the hive by waiting until the honey is almost all or entirely capped, and this is undoubtedly the preferable method. It is a matter of common observation that honey which remains in the hive for a long time has a better "body" and has more of the characteristic honey aroma. By ripening in the hive, honey gets its characteristic flavor to a greater extent than is possible in evaporation outside of the hive.

There have been several machines devised for the artificial ripening of honey which has been extracted "green," that is, with too great a water content. The principle on which all of these are constructed is the application of heat. not to exceed 160 degrees F., for a sufficient time to reduce the amount of water present to about 20 percent. Either sun heat or artificial heat may be used. In the western part of the United States honey may be, and usually is, extracted before it is all capped, because it is the general practice of bee-keepers to run the honey directly from the extractor to large tanks, sometimes holding several tons, out in the open, covered with porous cloth tightly tied down to exclude bees. Many of these tanks are contracted at the top, leaving only a comparatively small opening. On account of the extreme dryness of the atmosphere and total lack of rain during the dry season, this partial evaporation outside of the hive takes place very rapidly.

The advocates of ripening outside of the hive argue that, if honey is extracted before all the water is removed from it, the bees have less to do inside of the hive and can devote almost all of their time to gathering nectar in the field. This obviously would result in an increased amount of nectar, and, consequently, provided the forage will produce it, in an increased amount of honey. They argue that it is impossible to detect any difference between honey ripened inside of the hive and that ripened outside, as far as flavor is concerned, but this is a point on which many other bee-keepers and experts in honey-tasting do not agree with them. It must be admitted that, for general sale, the delicate aromas of well-ripened honey are not necessary, since the purchasing public is, as a rule, not educated on this point; but it certainly pays to produce the very best article possible for the further education of the trade, and, therefore, a thorough ripening inside of the hive is very much preferable. To insure this, it is better to tier up the hives rather than extract as soon as a hive-body is full.

On all honeys, after extraction, if allowed to stand in a vessel, a scum will rise to the top, made up of impurities, such as wax, brood, dead bees, and particles of dirt which may get into it. This is particularly the case with honeys which are extracted when not thoroughly ripened. In all cases honey should be strained as it leaves the extractor and subsequently skimmed until no further impurities come to the top. It is frequently the practice to draw honey from the bottom of the tank in which the honey is stored, through a "honey-gate," so that the impurities do not get into the smaller receptacles in which the honey is to be packed.

The thorough ripening of honey cannot be too strongly recommended. Honey attracts moisture, and there is always a tendency for a very thin layer to form on the top of the honey in which the water content is very high. In such a film the amount of sugar is low, the acetic-acid-forming bacteria can grow rapidly and the honey becomes sour. In thoroughly ripened honey, it is very probable that a film of thinner honey is always present, but, in such a case, the sugar content is so high that the bacteria cannot grow.

It is desirable that honeys from different sources be kept separate as far as possible if the product is to be used for the bottling trade. This can be done only by extracting at the close of each honey-flow. While it is probably impossible to get a honey from only one species of plant, except under the most abnormal circumstances, at the same time honey may generally be removed at the close of each flow so that the total quantity will have the characteristic flavor imparted by a single kind of flower.

The Granulation of Honey.

Almost all honeys granulate or "candy" after a certain time, and may become solid. This phenomenon varies greatly in different honeys. For example, alfalfa honey produced in Colorado will often granulate solid within a few weeks from the time it is extracted; while the white sage honey of southern California will often remain liquid and entirely clear of crystal for two years and often longer, if properly put up. The reason for this difference in the time of granulation will be discussed under the heading of "Types of Honey." Honey from the same species of plant varies somewhat in different localities.

Formerly the general public was suspicious of granulated honey, in the belief that it contained cane-sugar, but, fortunately, it is now generally understood that pure honeys will granulate in time, and this crystallization is generally considered as a test of purity. The education of the purchasing public has so far progressed that now some bee-keepers prefer to sell their honey in a solid granulated condition, it being cut up into bricks and wrapped in oil paper.

In bottling honey, or putting honey from any large receptacle into smaller ones, it is necessary to liquify the entire quantity completely before the operation is begun. This may be done by immersing the receptacle in water which has been heated to 160 degrees to 170 degrees, F., and letting it remain until the honey is all liquid and free from crystals. Honey should never be liquefied by direct application of heat, and it is extremely important that it should not reach a temperature of more than 160 degrees, F. It is well-known to almost all bee-keepers that honey heated to higher temperatures will become darker in color and lose flavor, and, consequently, they are generally very careful on this point. There is, however, a very much more important reason for avoiding high temperatures. When honey is heated to 180 degrees, F., and more, the higher alcohols which give honey its aroma are driven off, and, more than that, a decomposition of certain of the sugars takes place; this is what gives the darker color to the honey. Of all the various substances used for the adulteration of honey the one most nearly resembling pure honey is invert sugar, of which the Herzfelt artificial honey is the best illustration; in the detection of adulteration, one of the tests for the addition of invert sugar is based on the presence of decomposition products due to heat. These decomposition products in invert sugar are probably identical with the decomposition products in overheated honey; at any rate, honey which has been heated to more than 180 degrees F. for any considerable time, gives the test for invert sugar and would, therefore, be declared to be adulterated if this test were applied by a chemist. A bee-keeper might argue that he is not infringing on the pure food law in over-heating his honey, since he had added nothing in the way of an adulterant. If, however, he changes the chemical composition of his honey by injudicious treatment, it is no longer pure honey, and he has no right to sell it under that name.

It is very much safer to liquify honey at a temperature of about 140 degrees, F., and thus avoid any danger of decomposition. If this lower temperature is used, it is, of course, necessary to keep the honey at this temperature for a considerable time; but the safety of such a proceeding makes the extra time well worth while.

Two or three of the most widely circulated American text-books on bee-keeping advocate the drawing off of the liquid portion of granulated honey, particularly in the case of honey which was not thoroughly ripened before it was extracted. The granulated portion is then allowed to liquefy and is recommended as a very fine quality of honey. This practice is in no way permissible, as will readily be seen if the composition of honey is studied. Honey is made up of dextrose and levulose in about equal quantities, sucrose, a certain amount of ash, and water. In granulation, the dextrose crystalizes readily, and the levulose probably does not granulate at all. If then, the liquid portion, consisting largely of levulose, sucrose and water, is removed by draining or by pressure, the resulting portion is not honey but dextrose. However fine the flavor of such a compound may be it is not honey, and cannot truthfully be sold as such.

Since honey separates into its component parts in granulation, it is very necessary that *all* the honey in the receptacle be liquefied and thoroughly mixed before any portion is removed from it for bottling or canning. If, for example, honey is in a 60-pound can, and is to be transferred to pound bottles, it is necessary that the entire 60 pounds be liquefied and mixed before any is poured out into bottles, in order that all the bottles may contain honey according to the legal standard. Unless this is done, some of the bottles will contain a high percentage of dexrose and will granulate rapidly; while others will contain a preponderance of levulose and will not granulate for a long time. Unless this mixing is done thoroughly, none of the bottles will contain absolutely pure honey. In order to protect himself, the bee-keeper must be very careful on this point. Some bee-keepers prefer to pour the honey cold into the bottles and heat it afterward before sealing. As a matter of convenience this has many points in its favor, but, in view of the separation into component parts which may take place, it is a bad practice. The honey should first be heated and liquefied completely, especially if honeys from several species of flowers are to be blended.

As previously stated, there has existed, and possibly still exists, a popular idea that granulation indicates adulteration by the addition of cane-sugar. This is, of course, untrue, since pure honeys do granulate solid. Many bee-keepers in combating this idea have stated that this very granulation is a test of the purity of the honey. This statement, so frequently made, is equally untrue, since invert sugar—one of the adulterants sometimes used—will also crystalize solid as rapidly as do most honeys. Bee-keepers should not make such statements to their customers since it may reflect on the purity of their goods if the truth is found out.

Age seems to affect honey greatly. Repeated granulation and liquefaction as the temperature varies year after year in some way affects the chemical composition of the honey, changing the product so that it may not have the composition that it had at first. Some honey 35 years old, submitted to this Department, was found to contain too much sucrose. A sample of the same honey had previously been analyzed by two official chemists and declared to be adulterated; but the history of the sample precluded this possibility. The honey had apparently changed greatly with age in appearance as well as in composition.

Some bee-keepers make a practise of adding a very small amount of glycerin to the honey to prevent granulation. This should not be done, for it is adulterating the honey. Some have argued that, since glycerin costs so much more than honey, they are not adulterating in that they are not adding something cheaper to the honey to increase their profit. According to pure food laws, however, nothing can be added to honey, unless the addition is specifically stated, and the addition of even a small amount of glycerin is, in the eyes of the law, as great an offense as the addition of glucose.

Heating Honey for the Destruction of the Bacteria of Disease.

The only condition under which honey should be heated to a higher temperature than 160 degrees F. is in the case of honey which has been extracted from a colony containing foul brood. In order to kill the bacteria of either of the brood-diseases, it is desirable to dilute the honey by adding an equal amount of water and then raising the temperature to the boiling point and keeping it there, allowing the mixture to boil vigorously for at least 30 minutes; in order that no risk may be run, it is better to make this one hour. Honey which is so treated is changed chemically and is no longer pure honey, but it makes a good syrup for feeding to bees and is the best way of using honey from an infected source. Too much care cannot be exercised in bringing this to the proper temperature, but it must be remembered that the resulting product is not honey but a syrup, the chemical composition of which is quite unlike that of pure honey.

Packing of Extracted Honey.

If honey tends to granulate rapidly, it will save much trouble in liquefying to put it into the receptacle in which it is to be sold as soon after extraction as possible. There will then be no difficulty from the various ingredients becoming separated. To preserve the delicate aromas it is desirable that honey be sealed as soon as possible.

When honey is put up in less than 3-pound packages it is generally bottled. A bottle makes a much more attractive package than a tin can and shows off the contents. There is no doubt of the fact that honey sells largely on its appearance, and too much care can not be exercised in packing and labeling so as to make the package attractive to the purchaser. In cases where a bee-keeper sells directly to a local trade he may educate his customers to judge his honeys by their flavor, in which event it is immaterial what kind of a package is used, and honey may even be run out from a large can into a vessel furnished by the customer, when the honey is delivered. It is too often the case, however, that bee-keepers put up their honey in such poor, unsightly packages that they can get only a low price for their goods.

If honey is put up in more than 3-pound packages, tin cans are generally used, and the most common receptacle is a square can holding 5 gallons (60 pounds). Two of these are usually boxed together for shipment. Square and round cans of various types are often used for smaller quantities. Barrels are preferred by some for large shipments for the baking and confectionery trade, but their use can not always be advised. Before honey is put into it, a barrel must be thoroughly dry, and *tight when dry*, because of the fact that honey takes up a certain amount of moisture, and if, when the honey is put into it, the barrel is damp, the honey will absorb the moisture, causing the barrel to leak. Barrels also absorb a certain amount of honey. In dry climates, particularly, barrels should be used with caution.

When honey is packed in bottles it is desirable that granulation be retarded, since a partially granulated bottle is not attractive. To aid in the retarding of granulation the honey should be entirely liquefied, thoroughly mixed in a large can, and run into the bottle *warm*. The bottle should be as full as possible and sealed hermetically while still warm. Granulation usually begins on the edges of the top line of the honey, and spreads rapidly from these points; this is probably because some honey gets upon the sides, and partially dries. It is, therefore, desirable that the honey fill the bottle clear to the cover to prevent this. It must also be free of bubbles.

Bottles may be hermetically sealed by using some style of clamp cover or by sealing a cork with a mixture of beeswax and resin. This mixture may be colored by the addition of a dye. Granulation may be considerably retarded by keeping the honey at a nearly uniform temperature. This should not be less than 65 degrees, F., and is much better at 90 degrees to 100 degrees, F. While the honey is in the hands of the producer or bottler it may be kept liquid for a long time in this way, but, of course, when cold it is generally subject to changes of temperature. Honey, either comb or extracted, should never be kept in a cool or damp place.

THE PRODUCTION OF "CANDIED" HONEY.

Honeys of average type are relatively free from non-sugars, such as that made from alfalfa, soon granulate solid and are sometimes sold in bricks. Granulation may be hastened by changes of temperature and by stirring. If it is desired to have a can of honey granulate rapidly, it may be carried from a warm room out doors in winter and back again at intervals of a day or two for a couple of weeks. If this is accomplished with occasional stirring when granulation first begins, the whole can will soon be a solid cake. Honey may also be poured into smaller receptacles such as waterproof pasteboard carriers or oyster pails, and allowed to crystallize in the package in which it is to be sold. If allowed to granulate solid in a large tin can the tin may be cut away and the honey cut into bricks with fine wire in the way that prints of butter are sometimes prepared.

A market for "honey-bricks" must generally be built up locally, for as yet the general public has not learned to look for honey in such shape. The cost of the package is less than that of bottles, and the granulated honey is by some considered as superior for table use to liquid honey. Several bee-keepers have used this method with success, and claim that it gives great satisfaction to their customers.

HONEY TYPES.

It is well known that honeys from different plants vary considerably in taste, color, granulation, etc. The taste and color are given to honey by the plants from which the nectar is derived. Granulation may be considered as a property of all honeys, or, rather, of the dextrose contained in all of them, and, from a study of the chemical composition of many specimens, it seems probable that all honeys would crystallize were it not for the fact that some of them contain an excess of either non-crystallizable levulose or dextrose gums, and other non-sugars. The following table will make this point clear:

I. Normal Honey (from nectaries of flowers.)

1. High Purity (high in sugars, relatively low in dextrine gums, and other non-sugars.)

a. Levulose type, e. g., mangrove, tupelo, sage.

b. Average type: a. High in sucrose; e. g.; alfalfa. b. Low in sucrose; e. g.; buckwheat.

2. Low Purity (relatively high in dextrin, gums and other non-sugars; e. g.: basswood, sumac, poplar, oak, hickory, apple—most tree honey).

II. Abnormal Honey (not from nectaries of flowers) (generally high in dextrin, gums and other non-sugars).

1. Honey-dew Honey (from aphides and other insects.)

2. Coniferous Honey (plant exudations not from nectaries).

Honeys containing approximately the same amount of levulose and dextrose, and which are high in sugars (average type) granulate readily. Very few honeys have more dextrose than levulose. If, however, the levulose is considerably greater than the dextrose (Levulose type) or if the non-sugars are relatively high (Low Purity and Abnormal Honeys) granulation is retarded. Some honey-dew granulates rapidly, but no abnormal honeys of that type were included in the samples examined, and consequently they are not included in the table.

The use of the terms "high" and "low" purity in this table must not be taken to indicate the comparative values of the various honeys. Low-purity honeys which have relatively more dextrin, gums and other non-sugars, are just as good honeys as those of the high-purity class. Abnormal honeys, however, are less desirable. The presence of the non-sugars in low-purity honeys may be due largely to a slight admixture of honey-dew, since most honeys contain a trace of this. It must be remembered in considering this subject that practically no honey is from a single species of plant, and therefore they will vary considerably according to the other nectars added to them, as well as according to local soil and climatic conditions.—Read at the Harrisburg Convention.

Beedom Boiled Down

Old Queens Dull-Looking.

J. E. Crane, in Gleanings, thinks the most distinguishing sign, when one tries to decide by looks whether a queen is young or old, is the dull look of an old queen as compared with the bright look of a young one, no matter what the color.

Understocking a Locality with Bees.

The danger of too many bees on a given area has been pretty well understood, but perhaps no one heretofore has said anything about any danger from too few, unless it had reference to there being too few bees to secure proper fertilization of blossoms. Now comes this statement, in Gleanings, from the Colorado State convention:

> W. C. Dyer said that he believed there was as much danger from understocking a location as from overstocking. He claims that, if the nectar remains in the flower, and is not gathered by the bees or other insects, it will dry down to a hard scale, and so stop further secretion in the blossom; but if there are sufficient bees, the flower secretes nectar for several days.

Caution as to Liquefying Honey.

Mr. E. E. Coveyou, of Michigan, the man who does such an extensive business in bottling honey, says that it is very important, in liquefying honey, to draw off the melted portion as fast as it melts. If the liquefied product is kept under heat until all the solid portion of the honey has become dissolved, it will lose some of its delicate flavor and darken somewhat in color. The same suggestion has come from other sources; and we may say in addition that Mr. Coveyou's experience has been quite in line with our own. It is a fine art to liquefy honey, and do it right, without impairing the flavor or color.

Right in this connection we discovered in our experiments with the capping-melter that it was important to allow the free honey to run off as fast as the cappings melt. The conditions in a capping-melter are much the same as those that are present in a tank that is melting up candied honey.—Gleanings in Bee Culture.

Tariff on Honey.

E. G. Mann, in Gleanings, regrets that at the Detroit convention a higher tariff was recommended without a fuller discussion. He says:

> Those who advocate a higher tariff ostensibly for the purpose of excluding diseased honey and wax are open to suspicion, inas-

much as the exclusion of unwholesome and dangerous substances may easily be controlled in our imports without a tariff; and, like beneficiaries of tariff in general, they wish to conceal their intentions under the cloak of public welfare. They keep our eyes on the dangerous germs of foul brood while they quietly abstract from the public 5 cts. on wax and 2 on honey, and this, too, while we are trying to get the people to consider our honey a desirable, cheap, and wholesome food.

Perhaps it may be well not to be too insistent on a rise in tariff at a time when there is a general cry for lower rates, and when even some of the men who have made fortunes from high tariffs are beginning to say tariffs should be lowered.

Using the Uncapping Knife.

Opinions differ as to whether an uncapping-knife should be used hot or cold. Perhaps they always will differ. What may be best under one set of conditions may not be best under another. As to whether the stroke of the knife should be up or down when uncapping, it would seem there should not be the same difference of opinion. There has been some discussion regarding these matters in Gleanings, and while there seems no great convergence of opinion regarding the first point, there seems some tendency toward a general preference for the downward stroke of the knife. Louis H. Scholl says:

> I have tried both the up and the down stroke in uncapping tons and tons of honey, using many different knives, and I often wonder why the upward stroke is used. I have tried it often, especially to find the better way, and I have come to the conclusion that downward shaving is what I prefer. It seems easier to me; the knife can be handled better; the comb need not be tilted so far, and the cappings fall over and off readily instead of hanging to the knife.

Shaking to Start Work in Sections.

Geo. W. Williams, the enthusiastic apostle of shaking bees, gives this as his method of procedure when a colony seems slow to start work in sections:

> To begin with, we will give the hive a vigorous kick or two to ease up our rising temper, and, incidentally, to cause the bees to fill themselves sufficiently with honey. Next, give them a few puffs of smoke, and then dump every bee, queen, drones and all, with a good sharp *thump*, in a pile in front of the hive; and as we put the frames back we will put the honey and capped brood in the center, and the younger brood to the outside, and the job is done. Now, if the bees do not start to work in the sections, and in *all* of them alike, before morning, it is because they are different from mine; and I will always believe that their education has been neglected. It would do your eyes good to see the beautiful cases of honey taken this season from just such a colony. In all my manipulations I try to keep the fact constantly before me that a *thorough shaking never fails to bring a colony into the same psychological condition that characterizes a newly-hived swarm;* and, as I go among them, and find one that, for any cause, fails to come up to the standard I have set, I "*shake*" it.—Bee-Keepers' Review.

"Bunching" Bees for Winter.

For 11 years Oliver Foster has practised with satisfactory results, in Bent County, Colo., a plan of outdoor packing that certainly has a good look. He bunches together 8 hives, 4 side by side in a row, and back to back with this another row of 4. For best results there must be no cleats on sides or back ends to prevent making a solid block of the 8 hives, neither must there be any projection of covers. If necessary, plain boards may take place of covers. The idea is to have the hives on a level surface, close together, with no space between them, either at the back or side.

Mr. Foster's plan of packing, especially with regard to entrances, seems particularly to be commended. He says in the Bee-Keepers' Review:

> For convenience in packing we will nearly close the entrances, and then cover them all over with packing, so we will now form winter entrances at the *top* of the hives; ⅜x2 inches is large enough. These may be cut from the top edge of the hive bodies, or they may be provided for in the cover. The top entrances for the four outside hives should be in the middle of the exposed side, while those of the 4 inside hives should be in the corners next to the outside hives. This will bring two entrances on each side of the block, and equally divide the distance between them.
>
> In closing the lower entrances, leave an inch or two open at one side, that side farthest from the center, and lean a piece of tin or board 6 or 8 inches square against the hive over the opening to form a small, dark anteroom in front of each lower entrance. This will relieve the bees of any possible occasion to worry before the change in entrance is discovered, provide a dumping ground for dead bees, and a clustering place for live ones, if needed, in warm weather. See that all entrances are mouse-proof, and we are ready to pack.
>
> Lean a layer of straw up against the block of hives all around on 4 sides, and bank earth against it. Lay straw over the top also, letting it project over the edge of the block all around, or 4 inches deep. Lay it so that the straws will radiate from the center outward. Then pile straw on a foot or more deep in the middle. We will cover this with earth also, but to keep it from rolling off over the edge, make a hoop the size of the block, 4 inches deep, of 1x4 strips of board, and lay this on the straw. Now shovel on all the earth that will stay on, spatting the steep sloping sides down smooth and snug into the corners.

Scholl and Divisible Hives.

Inquiry has been made as to Louis Scholl's management of divisible-brood-chamber hives. Advocating shaking as a means of arousing the energy of bees (Gleanings), he claims that the various manipulations of the season shake energy into the bees, and incidentally gives the following resume of his management:

> To stimulate breeding, the upper and lower stories of the brood-chamber may be exchanged. This tears up the colony, and the brood-nest is re-arranged by the bees, which has a stimulating effect on them. Later the two shallow stories are exchanged again, and one with empty combs is slipped in between them to "knock swarming in the head." Just before the honey-flow they are torn up again, as the two lower stories (there are three now for the brood-chamber) are exchanged again. The top story, which is now partially filled with honey, so that the bees are crowding out the brood, is raised up, and a new super with foundation placed under it. This makes still another shaking; and, how those bees do work!

Honey in Jelly-Tumblers.

As containers for extracted honey, jelly tumblers have the advantage over bottles that they need not be thrown away by the consumer, but are of value as tumblers. An objection has been that unless kept right side up they allow the honey to leak. O. L. Hershiser has overcome this difficulty, and at the same time the difficulty of granulating. He says in the Bee-Keepers' Review:

> "The tin lid of the jelly tumbler fits snugly, but does not *seal* air-tight. However, it may be made to seal air-tight by the use of a paraffined paper disk cut large enough to project about 3-16 of an inch beyond the edge of the top of the glass. This is placed on top of the glass while the honey is still hot, and the tin cover is forced down over it, thus tightly sealing the glass. So thoroughly may jelly glasses be sealed by this method that I have frequently carried them loose in my grip or pocket on long journeys, and for a considerable length of time, paying no attention to keeping them right side up, and no leaking occurred.
>
> "The paper used for the disks is what is known to the paper trade as paraffined paper. The lighter colored and comparatively heavy stock should be used, as it makes a closer fit, and seals more securely, than the lighter grades.
>
> "Honey sealed up in this way will remain liquid until sold and consumed, if that be within any reasonable time. The writer has no difficulty in so preserving honey in a liquid state for the space of 2 years, and he has samples still perfectly liquid that were put up for show purposes at the Pan-American Exposition, nearly 8 years ago."

Vicious Goldens.

"We have complaints from all sides of the very yellow bees, which are more vicious than the old hybrids. Yet we are obliged to furnish these bees, in spite of their temper and lack of hardiness. There are strains of very yellow bees that are gentle and hardy, but they are the exception. According to our experience, there is no better bee than the old leather-colored Italian, and we are inclined to think a slight mixture of black blood helps the harvest."—L'Apiculture Nouvelle.

Number of Bees Afield at One Time.

In Prak. Wegweiser it is stated that the number of bees afield at one time from an average colony is about 10,000. This was decided by taking the weight of a colony when all the bees were at home and comparing it with the weight when all were afield, making the observations at a time when the bees were getting nothing from the fields.

But would as strong a force go afield when nothing was doing as when there was the incitement of gain?

Again, what was considered an average colony?

The probability is that if we could find out the truth about it, we would find that what is an average colony in the apiaries of some of our best honey-producers, at a time when honey is coming in a flood, would be found to have in the field at one time a much larger force than 10,000 bees.

Ideal Location for an Apiary.

Here is the idea of E. D. Townsend, as given in Gleanings:

> "The ideal location for an apiary is a clearing of about 2 acres in the midst of woods. I like to have the timber surrounding this apiary of second growth, for the second growth is denser than the first, and affords a better protection against the prevailing winds in the spring. Then if I could have this timber to my liking it would be about 50 feet high."

But some one replies, "The idea! why, that's 10 times as much land as is needed. A place cleared just large enough to hold the hives, and trees twice as high, would be the ideal condition for best protection." But listen to Mr. Townsend's reply:

> "Such a condition, however, is just what we do *not* want, for howling winds might be blowing overhead that would chill every bee that ventured above; and, at the same time, if the sun were shining the temperature inside the enclosure would, perhaps, be such that

the bees would venture out and be lost. It can be seen that, with twice as much of a clearing, and with the timber only 50 feet high, there is some circulation of cool air in the yard, which will hold the flying forces back whenever the general weather conditions outside are unfavorable. The fortunate man is the one who has just enough outside protection and no more. With no outside protection at all, as in cases where the hives stand exposed to the full force of the wind, during breeding time in the spring it is very difficult for colonies to build up to the proper strength for the early honey-flow in June. A high board fence is of but little avail for this outside protection, for it protects the hives only enough to entice the bees out-of-doors when it is too cold for them to fly, so that they are caught in the cold wind and lost."

Ants and Bees.

Ants are sometimes troublesome in and about hives in the North, but the matter is not so serious as it is in the South, where they sometimes clean out a whole colony. A. I. Root, in Gleanings, tells how they were mastered on the island of his winter home in the South. He says:

> My good friend, we had the same trouble on the island; but when Mr. Shumard had about 200 laying hens right in the dooryard and all around the apiary, not an ant troubled his hives.
>
> Little chickens and big went for the ants just as soon as the nest was stirred up anywhere in the garden or apiary, until the ants decided that *that* was not a healthy locality for them. Finally the women-folks complained so much about having so many chickens around that Mr. Shumard fenced them off to another part of the island, and then the trouble with the ants began. He placed all his hives on benches with the legs standing in basins of water, as you suggest. But this was a good deal of trouble, for leaves and trash would get into the water, and the ants would get across. By putting some kerosene on the water it prevented the evaporation and repelled the ants better than pure water alone; but so long as he kept the chickens away, there was a constant warfare. Every little while the ants would find a hive unprotected, and sometimes they would almost ruin a good strong colony just over night. I do not know of any thing that succeeds so well as a lot of chickens.

Dr. Miller's Question-Box

(Continued from page 128.)

could get the bees that could work red clover blossoms? The "A B C of Bee Culture" says that one man succeeded in doing that.

4. Have the Italian bees longer tongues since they have been bred in this country? and is it possible to increase the length of their tongues by constant selection?

5. On page 279 of "A B C of Bee Culture," is a plan for making increase. What do you think of it, and how do you like the nucleus system? INDIANA.

ANSWERS.—1. Yes, it is unusual, and not a very good thing. As far north as Indiana a queen reared in March is not likely to prove of much value.

2. You could gain but little by merely swapping escorts, and might lose much; for the new escort might kill the queen.

3. Control of mating would be a great help in trying to breed for any trait.

4. I don't think there is any difference in general; and yet it is possible that there may be some difference in particular cases if care in selection has been for any length of time.

5. The nucleus plan is good, as also the plan you mention in "A B C of Bee Culture." Which is best depends upon circumstances. But by the Alexander plan you quote in Gleanings you are probably led to believe that you can get two colonies in place of one to start in on the clover harvest, and thus get twice as much honey. I am sure that would not be so here, and I doubt if it would be so with you. I can get more clover honey from the single colony than from the two that result from dividing.

Buckwheat—Decoy Hives—Tobacco-Smoke and Bees.

1. Does buckwheat bloom at the same time that white clover does? How much should be sown to the acre? Does it make the bees want to swarm in the fall? Is the grain good for chickens?

2. Will you please explain decoy hives. I have seen the word used several times in the American Bee Journal. I believe that they are used to attract swarms.

3. Does it hurt the bees to use tobacco smoke. MISSOURI.

ANSWERS.—1. No, buckwheat is much later, usually being sown after clover is in bloom, say about the last of June. Some sow a peck to the acre, some twice as much. It is not likely to make bees swarm. The grain is good for chickens.

2. Leave an empty hive anywhere where a swarm may enter of its own accord—that's a decoy hive.

3. It may, if used heavily.

Rearing Queens for Italianizing.

I have 2 Italian colonies and 20 black ones. I wish to rear Italian queens.

1. After I have a frame of queen-cells prepared with Italian larvæ, will it have any effect on Italian queens if I put the frame over zinc in a black colony to be nursed by black bees?

2. Can I mate a queen with drones in confinement, by putting a young queen in a 2-frame nucleus and the desired drones? SUBSCRIBER.

ANSWERS.—1. No; but if you are counting that you will get cells started merely by putting brood over an excluder, a laying queen being below the excluder, you will probably have more failure than success.

2. No.

Bee-Cellar and Honey-House.

I am just beginning to keep bees, and would like to build a bee-cellar with a honey-house over it as given in the diagram. I live on the top of a large hill, and think it would be too cold to winter the bees outside. I live in the central part of Crawford Co., Wis.

I ask your advice as to whether to build or not. If you think it best for me to build, how should I build? Is my plan a good one? I have 8 colonies of Italian bees. WISCONSIN.

ANSWER.—Your scheme is good. An outside stone-wall 9 inches thick, and an inside wall of the same thickness, with a 6-inch air-space between ought to make a warm cellar. You propose to have your cellar 4 feet under ground and 3 feet above ground. Unless there is something in the lay of the land to prevent, you might have more of it under ground, making it warmer. You propose to have fresh air enter at the ceiling and have foul air enter at the bottom of the cellar. Better let fresh air enter at the bottom and foul air start out at the top. If you should make a permanent business of bee-keeping, you may want a larger building than 18 x 14 feet.

Granulated Unfinished Sections.

I have 31 colonies of Italian bees, and expect to build up a fine apiary, as I have one of the best locations in the United States for alfalfa and sweet clover. I am running for comb honey and am using T-supers, and agree with you in thinking they are far superior to the section-holders.

The honey-flow stopped sooner than I expected last fall, and I was left with 12 supers of unfinished sections on hand. I tried feeding them back last fall on the hives, but the bees would not remove the honey so I still have them in my honey-house. Last year I had 2 or 3 such supers, and I put them about 6 rods from the hives in the spring, and the bees soon found the supers but they not only got the honey, but they ate the combs so badly that I could not use them for baits. The honey that is in the 12 supers in the honey-house at present is granulated. How can I feed that back to the bees and have the combs for baits? Some sections have very little in, and others from a quarter to a third full. I will have more unfinished sections next fall, and I would like to know how I can get them cleaned out if the bees will not do it by putting them on the hives. UTAH.

ANSWER.—First, let me tell you what to do next fall. If you have enough supers of unfinished sections so that you have about one for each colony, set the whole business out at once, 2 or 3 rods away from the apiary, or farther, and the bees will clean them up without tearing the combs. But suppose you have only 5 supers for 50 or 100 colonies. In that case put the 5 in a pile, cover them over, leaving a hole where only one bee at a time can get in, and the business will be done all right. As to the sections on hand now, you can treat them the same way, only it isn't so certain that they'll clean out the granules. In the fall they can clean them out before any of the honey is granulated, in which case they will be sure to make a clean job of it. If I understand him correctly, so good an authority as G. M. Doolittle holds that if you let the bees now clean out the candied honey, it will be all right to give the bees the sections with the candied honey in them, as they will clean out the sections before putting fresh honey in them. I have some question about it. If you try any of them, I wish you would report.

Probably Common White Clover.

We have all over this part of the country a little white sweet-scented clover, which we call little wild clover. Is this the clover that is called white or sweet white clover in the American Bee Journal? When is the best time to sow the seed? ILLINOIS.

ANSWER.—I think it is the common white clover. It is sweet-scented, although the scent is not strong. It does not grow high, each leaf starting from the ground. Spring is a good time to sow, although it may be sown almost any time.

Tiering Up Supers.

I have the 8-frame hives. Is it wise to place more than one story on the hive? What I notice is, after having put on one super the same size of the hive, then another, that then when we take the 2 supers off, a cluster of bees can't get in the hive, and they hang outside and either die or stray away. Is this not discouraging to the rest? Would it be better not to put more on than one super, then take it off and replace by a fresh super? ONTARIO.

ANSWER.—I think you have hardly been careful in your observation. If bees hang out because too crowded or too warm in the hive, they neither die nor go astray, and are not at all discouraged. If they are busy gathering, give them super-room enough so they needn't hang out. To lessen the number of supers would do no good, and probably result in less honey. If there is nothing for them to do in the field, let them hang out to their heart's content.

Comb Honey Management—Best Size of Hive?—Long-Lived Bees, Etc.

1. Your article in the Bee-Keepers' Review, and the experience of a Mr. Myers, of Michigan, refutes the idea that our Northern land is not adapted to comb-honey production. Mr. Myers used the 8-frame Langstroth in home-made Hilton hives, heavier and thicker than those made by the factory. Would it be advisable in my locality to kill the queens in July each year? Two hundred and fifty pounds of comb honey were produced by Mr. Myers in some of his 40 colonies. He cut the queen-cells every 8 days. He used the T-super with, I believe, wooden separators.

2. If at the beginning of the honey-flow we put the frames of foundation in the old hive and put the brood in a hive, or in hives, on top of a super section with a Porter bee-escape underneath, would that repress the swarming fever more than the system you practice of cutting queen-cells out every 10 days? I believe that bees are more contented with new combs or foundation than old brood-combs.

3. Mr. Townsend advocates a 10-frame hive with extracting frames to the side of the comb honey sections in the section super for comb honey. Mr. Chapman told me himself that the 10-frame was too heavy, and he uses the 8. When doctors differ who shall decide? Had we not better try to find out for ourselves?

4. Is it not easier to cut out queen-cells in the Danzenbaker hive than in the Langstroth? I am pretty badly smitten on the Danzenbaker hive, but I see you do not like it as well as the 8-frame Langstroth.

5. One writer in the American Bee Journal says it is advisable for beginners to use the 10-frame Langstroth at first; that it can be used for an 8-frame Langstroth, and then he can satisfy himself hereafter which style he likes best. Is not his method logical?

6. I am at present of the opinion that a larger colony can be obtained by your system

than by the combined Chapman and Dudley Tube combination, although it would gladden an enthusiast's heart to see the way the masses of bees will ascend into the section super by the former method. Does my opinion coincide with yours?

7. Would not the finest comb honey, on the average, be produced by the Doolittle system, more especially if the old hive containing the brood were placed close to the new hive, with a Dudley Tube connecting both hives?

8. I know of one person who has long-lived bees. Would not bees of such inheritance be extremely valuable even in a short honey-flow?

9. You, no doubt, read the able article of Chas. Trout, of California, in the American Bee Journal, on rearing early queens and drones. Could we not by this method get queens and drones prior to the honey-flow, in our Northern territory? MICHIGAN.

ANSWERS.—1. I don't know what plan you have in mind, but I have some question whether you will like the plan of killing all queens in July. Try it on a partial scale first.

2. That plan will do more to prevent swarming than cutting out cells. But with brood over the sections, the cappings of the sections will be darkened, and the brood over the escape may not be cared for in the best manner.

3. "Let every man be fully persuaded in his own mind."

4. I know of no reason why it should be easier. If you take into account taking out and putting back frames, it is harder.

5. Although a 10-frame hive is not entirely convenient to use as an 8-frame hive, still it can be used in that way, whereas an 8-frame can not be used as a 10-frame at all.

6. Not having had experience with both methods, I am not in position to give them the fairest comparison.

7. I'm not sure I catch your meaning. Honey of best quality can be produced by the Doolittle system; but so it can by other systems.

8. Yes, long life is valuable, whether flows be long or short.

9. Mr. Trout says his "method is still in the experimental stage." However it may turn out in California, it hardly needs any experimenting to decide that it would be a dead failure here.

Effect of Bees on Flowers.

I have a next-door neighbor who is engaged in the florist business, and he asserts that flowers for cutting, when visited by bees, deteriorate much more rapidly than flowers that have not been so visited. In other words, the presence of bees shortens the life of cut-flowers or flowers for cutting. I am particularly desirous of keeping a few colonies of bees but do not desire to injure my neighbor's business. Could you advise me as to whether my bees would materially affect his interests? NEW YORK.

ANSWER.—The life purpose of a flower is to produce seed. When fertilization has taken place, the bloom is no longer needed to attract the bee, and, other things being equal, one would hardly expect a fertilized blossom to last as long as an unfertilized one. In the case of cut flowers, however, there is in most cases no production of seed. A cultivated rose, for instance, with its multitude of petals, is a botanical monstrosity, not capable of producing seeds, at least to the same extent as a single rose, and if it does not become fertilized by the visit of a bee, one can hardly see how such a visit should shorten its life.

Increasing Number of Colonies—Alsike Clover—Bees Dying Off—Eyes of Bee.

I enjoy reading the "Question-Box" very much, and consider it *alone* worth all that the American Bee Journal costs. I had 30 colonies last year, spring count. I increased to 50 by artificial swarming. I had only 4 natural swarms. They gave me 3500 one-pound sections of fine honey, and 300 pounds of extracted. I use your famous T-supers, and practise tiering up, as I find I get by far the best results.

1. Do you think with the above results from 30 colonies that I would be safe to increase to 100? There are not to exceed 25 colonies outside of mine within a radius of 3 miles. Our principal yield is white clover. We have had some basswood, but they did not work on it last year. There is a little sweet clover on the railroad.

2. Do you think it will pay to buy alsike clover seed for farmers to sow within one mile—would say 40 acres? Would it make any perceptible difference in the yield of honey?

3. Why do the bees die in some colonies worse than in others in the same row, packed the same, and to all appearances in the same condition? In front of some hives there seems to be a quart or more of dead bees, while in the next hive there will be none at all. My bees are packed outdoors under sheds facing the East and South.

4. How many eyes has a bee? IOWA.

ANSWERS.—1. Of course it can only be a guess; but I feel it a pretty safe guess to say that you would be all right with 100.

2. Yes, or to sell it to them at a bargain.

3. Differences in individual colonies are not easily accounted for. Yet the difference may be more apparent than real. In one case the bees have gone a distance from the hive to die; in another they remain in plain sight. A superseding of queens or a difference in their laying may bring it about so that in one colony there may be more old bees ready to die than in another.

4. Each bee has 3 simple eyes. The number of compound eyes varies. Cheshire counted on each side of the head—in a worker, 6300; in a queen 4920; in a drone 13,090.

Wedged Frames—Super Springs—Queens and Swarming.

1. In your answer to "Virginia," you tell him to use the wedges that come with the frames. I make my frames. Please explain how to make or get them, and how to use them.

2. Do you use springs with the T-super? If so, how many, what kind, and how? Also how near full would the super be before an empty should be placed below it? Will the bees then finish it above?

3. All my queens are clipped with the hives flat on the ground. Will the queen go back into the hive when the bees swarm? KENTUCKY.

ANSWERS.—1. A saw-kerf is made in the under side of the top-bar, into which the edge of the foundation goes. Then close beside this is another saw-kerf made by a finer saw, and into this narrower kerf the wedge is crowded. The wedge is a thin strip of wood as long as the under side of the top-bar, one side being chamfered down to an edge, so as to enter the kerf. If you make your own frames it will perhaps be easier for you to have no saw-kerf in the top-bar, but merely to let the foundation come up to the top-bar on the under side, and cement it there with melted wax.

2. I use a single spring in each super, crowded in between the follower and the side of the super. It is the common super-spring sold by supply-dealers, in shape something like the elliptic spring of a buggy.

3. Usually the queen returns to the hive when a swarm issues, but occasionally one enters another hive, or wanders off and is lost.

Bee in France and America—Honey.

1. Let us know who is right, the American or the Frenchman? I read on page 40, under the heading, "The Bee a Winner in France," that the bee drew 523,843 votes, as a domestic animal, which looks well. But the G. B. Lewis Co. print on the first page of their catalog: "A bee is a little insect." How can it be domestic in France, and an insect in America?

2. The bee gathers nectar from the flowers, which nectar, after undergoing a chemical process in the bee, becomes honey. Is not nectar dumped into the comb, then evaporated and becomes honey?

3. According to the Pure Food Law, must every honey-package be labeled with the producer's address, if sold by the producer to grocers or customers?

4. Please send me a few sample labels. I sell most of my honey in Mason fruit-jars. WISCONSIN.

ANSWERS.—1. A bee is domestic in France and an insect in America just the same as a dog is domestic in France and a quadruped in America; it is an insect in both countries and it is domesticated in both countries.

2. No; if you were to gather nectar and put it in cells it wouldn't be honey, and if the bee were to dump the nectar into the cells just the same as it gets it from the flowers it wouldn't be honey. It must undergo a change in the bee, although that change may continue afterward.

3. No; the law does not require that the producer's name be on the label. It does not require that the word "honey" be on the label or that there be any label at all. But it forbids labeling it honey unless it is honey, and if the name of the producer is on the label it must be the name of the true producer. In a word, the label mustn't lie.

4. I have no labels, as I don't produce extracted honey; but you can likely get them from any bee-supply dealer.

Unfinished Sections—Comb Leveler—Position of Pictures in "Forty Years."

1. Last fall the honey season closed suddenly with supers on the hives. As a result, I have a big lot of sections unfinished, too many to throw away. Of course, I let the bees clean them out last fall. Will it do to give the sections full thickness of comb to the bees next summer without leveling down the comb, or will the new honey be off-color if put in last year's comb? Of course, the sections are clean.

2. Can you tell where I can get the Taylor Handy comb-leveler? I haven't seen it listed in the catalogs for some years. Or do you think it is not necessary to thin the comb?

3. In your "Forty Years Among the Bees," why is it that the illustrations are not on the same pages as the descriptions of things? For instance, on page 200 you refer to Fig. 74, but the figure itself is on page 217, and so on all through the book. CALIFORNIA.

ANSWERS.—1. If the sections are not in the least discolored, they may be given just as they are. Sometimes the edges are discolored, the rest of the section being white. In that case they should be leveled down until the discolored part is all removed.

2. I think it is entirely possible you might get one by writing to one of the large manufacturers, even if the Taylor Handy Leveler is not on their list.

3. You'll have to ask the publishers about that. They're the guilty parties in the case. Indeed I don't remember that they consulted me about it. Go for them good and hard, for it would be much handier to have the pictures right on the page where reference is made to them. But there are places where there would be 3 pictures on the same page, and that couldn't very well be without putting one picture on top of another, which would hardly do. After all, there may be some good reason why the pictures are put the way they are.

Perhaps Bee-Paralysis—Moth and Bees.

I am a novice in the bee-business and am into it partly as a side line, and partly for love of the "little busy bee." Western Washington is a very poor honey-producer, about one year in 4 or 5 giving a fair crop.

1. I have one dovetailed hive of hybrid Italians that is a sore puzzle to me every year. They appear strong and healthy in the spring, but as soon as they begin turning out young bees, I find on the alighting-board a number of bees which are *coal black* in color, no down on them, and slimmer than ordinary bees. They can not fly, but just flutter their wings and hop about, while the rest pull them about and act in a generally excited way. This goes on all summer, the bees giving little or no surplus, while adjacent colonies are doing fairly well. Can you explain? Last year was very poor indeed. Over half of the bees in this neighborhood will not winter through, which I consider a good thing, as nearly everybody has a few box-hives from which they derive no benefit at all. I sell my honey locally, getting 25 cents per section for all I can produce, and then some, while shipped-in honey brings only 15 or 20 cents. Of course, I put out nothing but No. 1 fancy combs, using the other grades myself, or as bait-combs.

2. Do bees carry *moth* while swarming? I caught 3 swarms that came from moth-infested hives of a neighbor, and had to destroy them all in the fall. They were full of web and caterpillars. None of my own bees are bothered at all.

That February number of the American Bee Journal was a *"cracker-jack!"* WASHINGTON.

ANSWERS.—1. Looks like what is called bee-paralysis. The bees are probably no slimmer than others, but look so because their plumage is gone. They probably appear to be trembling. In the colder parts of the country the disease doesn't amount to much, but it is a very serious matter in the warmer parts. Many cures have been given, only to prove failures afterward. O. O. Poppleton has had much experience with the disease, and recommends (Root's "A B C and X Y Z" page 135) the following treatment: "He forms as many nuclei from strong healthy colonies as there are sick colonies to be treated. As soon as the nuclei have young laying queens, he gives to each, as fast as they can take care of them, one or two frames of the oldest capped brood from each of the paralytic colonies, and thereafter till all the brood of such colonies is used up. The diseased bees and queen he next destroys with sulphur fumes, fumigating the hives at the same time. . . . It is important that in giving the combs to the nuclei, there be no dead bees in the cells," as the disease is transmitted by dead or sick bees, although not by the brood or combs.

2. I don't believe that bees ever carry with them the moth, its larvæ, or its eggs.

Fastening Comb-Foundation—Tiering Up Supers.

I understand extracted honey, but never produced any honey in the comb in sections. I have 27 colonies, all with Italian queens introduced last season, 16 of them being in 2-story hives, the balance being singles. I make my own hives. As I get swarms I aim to put all into single-story hives. I expect to buy supers for them. I have one strong colony in a box. I mean to make a swarm for one of my upper stories, then in 21 days to make another from it. I also have 3 colonies that I bought complete, hive and all, at a sale, for $3.50. They had 33 pounds of honey in the supers. My hives are standard size, but the frames run the narrow way instead of lengthwise.

1. How do you fasten in brood-foundation? Also explain all about how you make and use splints. My frames are 10¾ x 7⅝ inches, inside measure.

2. Give me all the information you can as to the best and cheapest way to fasten foundation starters in the top of the sections. Must I buy the new hive the supply-men advertise?

3. I have seen men use the super and when full put an empty one under it. How would it do to take out the sections when filled and replace the empties? KENTUCKY.

ANSWERS.—1. Many of my frames were filled with foundation by pouring melted wax along the angle between the top-bar and the foundation, but of late years I wedge them in the sawkerf with the wedges that supply dealers send out with the frames. I never made splints—it's so much cheaper to buy them. But if you have a fine buzz-saw, all you have to do is to saw out little sticks 1-16 of an inch square and ⅛ of an inch shorter than the distance between the top and bottom bars. The splints are pressed into the foundation by the edge of a little board kept wet. See reply to "Minnesota," on page 103 of the March number.

2. If you have only a hundred or so to fill, the cheapest way is to press the edge of the foundation into the wood with a case-knife. If you have a considerable number, you cannot afford so slow a way, and should get a foundation-fastener. The Daisy foundation-fastener is one of the best. You don't need to buy a new hive to use sections. All that is necessary is to have your super fit on your hive, and almost any super may be fitted to almost any hive.

3. If you mean that you would have only one super for a hive, taking out the sections when filled and putting empty sections into the super again, let me tell you that would be an extravagant and wasteful way. You wouldn't get as much honey that way as to put the empty super under the other when the bees have it about half filled or less. I often have 5 or 6 supers on at a time and think I gain by it.

Prevention of Increase—Transferring—Making a Living with Bees.

1. I see by your writings that you have not yet succeeded in preventing swarming. Do you prevent increase?

2. What do you do with the swarm when it issues when you do not want to increase? Do you shake it back into the hive that it came out of?

3. Do you cut all the queen-cells every 6 days?

4. I have both 8 and 10 frame hives with bees in them but not many empty bodies with combs in them. I intend to work half of my bees for comb honey and the others for extracted. I have no empty bodies but intend to use supers 5⅝ inches deep, with foundation in, one on each hive to give the queen more room. Then when the honey-flow comes on, raise up this super with brood and put another in between, some with sections and others with frames. Do you think I can manage to prevent increase with these hives and supers? How would you advise me to go at it to prevent increase?

5. I have 30 colonies that I must transfer, but not increase them. How would you transfer them if they were yours?

6. Do you think I can make a living with the honey-bee? WISCONSIN.

ANSWERS.—1. Yes, it is not difficult to prevent increase.

2. Comparatively few swarms really issue for me. My queens are all clipped, and if a swarm does issue, the queen not being able to go off with it, the swarm returns to the hive of its own accord.

3. About once in 10 days I look for queen-cells, and destroy any that may be present. Next time around, if I find queen-cells well advanced, I make the colony queenless for about 10 days, or take some other measures that will make the bees give up swarming. At the end of 10 days, if I can give them a young queen that has just begun laying, I do not need to go into that hive again for the season.

4. When a colony swarms, you may remove or destroy the old queen, and a week later destroy all but one queen-cell. There should be no more swarming, and of course no increase.

As you intend to produce both comb and extracted honey, you may do thus: When the harvest begins, and before there is swarming, put all the brood in an upper story, and in the lower story the queen and frames of foundation or combs, with an excluder between the 2 stories. There will generally be no swarming. and the combs above the excluder will be filled with honey. Of course you can add section-supers.

If, after any or all of this is done, you still have more colonies than you think best, it is easy to unite spring or fall. You can get much information on the subject from "Forty Years Among the Bees."

5. Wait till the colony swarms, hive the swarm in a proper hive, set the old hive close beside it. Ten days later move the old hive to the other side of the swarm, setting it close beside the swarm. Eleven days later still, break up the old hive, giving the bees to the swarm and melting up the old comb.

6. That's a hard question to answer. but it's getting to be that quite a number are making a living at bees, and for anything I know your chance is as good as any.

Bees Affected by Bad Winter Stores—Italianizing.

1. My bees are not doing so well this winter on account of poor honey. We had a long dry spell here in August and September and the bees gathered lots of honey-dew. I winter my bees in the cellar under my house, which is a very good place for them, as the cellar is very dry and keeps an even temperature of about 40. I put 9 colonies in winter quarters, and they were all heavy in stores, but a whole lot of it was well sealed up honey-dew. I looked them over February 20, and they were all living. but some of the hives were spotted quite badly, and I also noticed on some of the hives a yellow watery stuff was running out. What do you think about this? Is not that a bad sign? I have been watching the American Bee Journal very closely to find something about honey-dew, from other bee-keepers, but so far I have not seen a word. It was certainly not only our bees here that gathered honey-dew last fall, as the dry weather in August and September was spread over a large territory. I see in the bee-book that it is safest to extract and feed up again with sugar or good combs, but last fall this was almost impossible, as it was very late when the flow was over, and as soon as we tried to open up a hive the bees were over us robbing. This is my third winter that I have had bees, and have been very successful so far.

2. Last year I got 642 pounds of extracted honey from 5 colonies, spring count, and increased to 9. Our bees are all hybrids and I have been thinking of getting some Italians, but think it would be safest for me to get one or two nuclei with queens. Where would you advise me to get them?

3. I see in the Journal that you have queens to sell. Could you also furnish 2-frame nuclei with queens?

When I get my bees out of the cellar I will report how they come out. WISCONSIN.

ANSWERS.—1. Yes, it is not a good sign to see hives spotted or to see liquid running out of the hive-entrance. Although the two things may go together, they are not one and the same. Diarrhea may come from bad food, and there may be no liquid running out of the hive. Liquid may be running out of the entrance without diarrhea, although such a condition predisposes to diarrhea. Lack of ventilation, especially with too cold a temperature, causes the moisture from the bees to settle on the walls of the hive, condensing into water there, and there may be so much of it as to run out of the hive. About the only thing that can be done about the honey-dew is to get it out of the hive in the fall and give the bees something more wholesome. Even if all the honey-dew is not removed, it will help to give sugar-syrup, as this latter will be likely to be used first, being more convenient to reach. In your case the thing to do now is to get the bees out for a flight as soon as the weather permits, and that will likely be before this gets in print.

2. You will probably be safe to order from any of the advertisers in the American Bee Journal.

3. I do not sell nuclei. My business is producing honey. I rear queens for my own use, and do not make a business of selling queens. My bees are mostly hybrids, and cross, so they are not a very marketable article, only sometimes some one insists on getting an untested queen in spite of knowing what they are. But I think not more than half a dozen a year.

Reports and Experiences

Wonderful Year for Rains.

We have had another fine rain. It has been a wonderful year for bounteous and timely rains. Unless the cold winds prevail we shall have an excellent honey-year.

A. J. COOK.

Claremont, Calif., Mar. 22.

Wintering Well—Clover All Right.

Bees have wintered fine in the cellar. Many are hanging out in front of the hives, but all are very quiet and in the very best condition.

I have some nuclei on 8 frames, 6 x 6 inches, and they are in perfect condition. Indications are good for a crop of clover honey.

Mercer Co., Ill., March 25. S. F. TREGO.

Bees Have Wintered Well.

Last season I wintered 5 apiaries on the summer stands without a single loss, and would have repeated the same thing this winter but for a defective hive-entrance and a mischievous mouse. I think that bees have wintered pretty well everywhere. All we want now is the blossoms. H. G. QUIRIN.

Bellevue, Ohio, March 26.

Open-Top Bee-Tent.

In my work with the bees I have learned that robber-bees will not go over an open-top tent with walls 5 or 6 feet high, which is altogether better than those little closed-top tents which double one up like a jacknife while at work. I have never seen this in print, and think that perhaps if known it might be a benefit to the fraternity. H. W. LEE.

Pecatonica, Ill.

Long Winter in Colorado.

We have had a long winter here—I think the longest in over 20 years—and there must surely be heavy losses in bees. The farmers were just about getting started in their work the last few days, when night before last we had a thunderstorm and rain, turning to snow. Today the snow is going off, but it will be too wet for farming for some days.

R. C. AIKIN.

Loveland, Colo., March 25.

Wintering Bees in Warm Room.

On page 92 of the March number, under the head of "Canadian Beedom," I note a criticism, or at least much honest doubt expressed in regard to the advisability of wintering bees in a warm room. On this above subject I wish to record my testimony, as I have had a little experience and some observation. The winter of 1907 and 1908, I had a colony in a 10-frame hive in a warm room. The temperature was 55 degrees to 75 or 80. True, they built up early very much stronger than those outside, going into winter quarters the same strength and under the same conditions, in November. But I utilized their strength to make increase, taking from them every few weeks 2 frames, to start a nucleus, thus keeping them down to the proper strength for the honey-flow.

As it was bees I wanted last year instead of honey, I produced from this one colony wintered in a warm room, 6 colonies that built up strong in 10-frame hives, and have all come through the winter in good shape, and secured 222 pounds section honey. I feel sure that now under the same circumstances I could have 3 and perhaps 4 honey-producing colonies ready for the honey-flow. I know that if I had the warm room large enough, I would have all of my bees in it, and I would take care of the early strength in having more colonies ready for the honey-flow. If we don't keep bees for what, and for all, we can get out of them, then why do we keep them?

A. J. Jones.

Urbana, Ohio, Mar. 24.

Report of Season of 1908.

I started last spring with one colony of black bees, and increased to 4 colonies which are at work nicely, but the weather is too dry and cold. The spring forage is somewhat short, but I hope it will be nice anyway. I introduced 2 Italian queens last fall, which I had success with in introducing, and those 2 Italian colonies are the strongest at present. I am going to Italianize all my blacks.

As stated above, I increased from one to 4. That is, I got one colony from the woods from a tree, which is the fourth colony, and last week I transferred a colony from a tree and it is a fair colony. So I have 5 colonies to start with this spring. I have all my queens clipped. I wish to increase to about 8 or 10 colonies before fall.

Jos. Jezek.

Nelsonville, Tex., March 30.

Advantage of 9-Frame Hive.

When I commenced to keep bees I used the 8-frame dovetailed hive with Hoffman self-spacing frames, and supers with section holders and separators. By experimenting a little I came to the conclusion that the hives were a little too small, and I had lots of trouble to get my bees to work up in the supers. So I enlarged the width of the hives to hold 9 frames, and I changed the supers to T-supers. I run the T-tin lengthwise of the supers, and use starters in the sections.

The advantage I have with the 9-frame hive is, that it gives me one more frame for brood-rearing, which means a large colony, and one more for winter stores. It also adds 8 more sections in the supers, as I run for comb honey altogether. My bees have been doing extremely well as to the season.

T. A. Crabill.

St. Davids Church, Va., Mar. 15.

Hunting Bee Trees—Reminiscences.

This is a good place to live, such fine clear water, cold as ice in the summer. My father moved here as one of the first settlers that came to this country. He was in the War of 1812—fought the British. When he came to this country the game was so plentiful that you couldn't raise hogs nor sheep, on account of the bears, panthers, and wolves. He lived on bear meat, venison, and honey and corn-pone ground in a hand-mill. He made his living by selling bear and deer skins and digging ginseng. There is ginseng in these mountains yet, but few bear and deer.

My father was a great man to hunt bee-trees. I have known him to follow them 2 miles by the sun, and find them. He had honey all the time. He would catch the bees when he cut the bee-trees, and bring them in. Then he would hunt a hollow tree and saw off 3 feet and burn it out, then scrape the coals off the inside, bore holes through the gum, and put sticks through crosswise. He would hew out a slab of a log and put on top of the gum. I have known him to have 40 or 50 of these gums at a time. Some years he wouldn't "rob" more than half of these gums. He didn't need it. He couldn't sell the honey. He always got all the honey out of the woods he needed. No one thought of a patent bee-hive then.

I would go with him hunting bee-trees when just a little boy, and would get so hungry I would eat the bark of the little birch twigs and mountain tea. I would have been a better bee-hunter if I hadn't been spoilt when young. I found 4 bee-trees last summer here. Some of them were very rich. There are very few frame bee-hives here.

This is a good place for bees, as there is plenty of bloom for them to store honey from. I am going into the bee-business on a small scale. I have bought five 8-frame dovetailed hives, everything complete. I have 3 colonies in box-hives, and am going to let them swarm, then I will transfer them to frame hives.

I am nearly 70 years old. All the learning I ever got was in a log schoolhouse with a dirt floor, one whole end for a fireplace, a log cut out for a window and greasy paper pasted on the crack for a window-pane. I got very little education. I was reared in a place called "Puzzle Hole," in between two big mountains. When you got in there, it puzzled you to get out. There were no roads, but a tow-path. They had to mark the trees or blaze them to get out.

T. J. Coager.

Lanes Bottom, W. Va.

Salt Lake Prospects Brightening.

The worst half of the smelters here in Salt Lake Valley have been closed down, and we are trying to build our industry up again with a fair show of success. The sun shines brighter again, and all nature is in bloom as of yore, and instead of the destructive poison blasts, we now have the gentle rains free from the poisonous effects which the smoke produced; and it seems more like old times with its fragrant honey-flowers and the little busy bee—millions strong—gathering honey all day long. The bees I thought, last year, did better for me than at any time before; and while we can not tell what may happen, the outlook at present in the Salt Lake Valley for a good honey-flow this season is encouraging, as there will be irrigation waters in abundance.

E. S. Lovesy.

Salt Lake City, Utah, March 25.

Massachusetts Convention.

The regular monthly meeting of the Massachusetts Society of Bee-Keepers was held Saturday afternoon in the Ford Building, Boston. Mr. Allen Latham, of Connecticut, spoke on "Swarm Control." He said he believed in giving the bees plenty of room, even putting on an extra brood-chamber, besides supers, sometimes placing a super between the brood-chambers, and another super over them; also giving ample entrance space. If the bees are cramped in their quarters they cluster on the outside of the hive, and then you may look for a swarm.

At the close of Mr. Latham's address the members asked questions, which he answered in accordance with the above.

The annual meeting of the Society will be held on the first Saturday evening in April, when the election of officers will be held.

The proposed law relating to bee-diseases in this State, which was submitted to the Legislature, has been laid over for a year.

The summer field-day will be held this year on the first Saturday in August, at the apiary of Mr. H. W. Britton, in Stoughton.

Joseph B. Levens.

Malden, Mass., March 8.

Baby Queen-Mating Boxes.

Of late I have noted some cditicism of small nuclei (Baby Mating Boxes if you please) from certain quarters to the effect that these small mating nuclei are being given up by many as too much trouble to look after, and that strong 8 and 5 frame colonies are preferred.

The criticism of this economical small mating-box plan of queen-fertilization, you have perhaps noted, comes mainly from large honey-producers—from men who own from 300 to 500 colonies of bees. For such large producers the strong nuclei may be more satisfactory but look at the number of bees and the quantity of extra bee-material required! It is simply out of the question with the one owning perhaps but 20 colonies.

The large producer will think nothing of breaking 25 colonies into full-framed nuclei, both for increase and queen-rearing—but what is the little fellow with a queen-trade to do? Can he afford to sacrifice even 10 of his full colonies in this fashion? No, he must economize; he must not use so many bees in his mating nuclei or he will not have strong colonies enough left to supply him with queen-cells, drones and extra bees for his queen-rearing operations.

Those who have most sweepingly condemned small mating nuclei overlook the fact that there are thousands of bee-keepers who do not own 25 full colonies each in all, yet have a desire to rear a few queens for their own use and have a few to sell. To such, it must be admitted, the small Baby Nuclei plan is a boon—it is economical, efficient, satisfactory and possible to the small producer.

Small mating nuclei are not so much bother, after all, when expense is considered. All that is required is regular feeding of thin sugar syrup once a week or so, when honey is not coming in—that is all.

The Twin Mating Boxes are provided with convenient feeders, and the task of giving each box a cupful of syrup once a week is not a great one—is it, now?

Swarthmore.

Bees in Good Condition.

Yesterday was the first day since my arrival home (March 20) warm enough to open the hives of my bees. I opened about 30 of them, and found them in good condition. They had consumed but a small amount of stores, and there was small loss in bees, but they have been more forward in brood in many years than they are this year. This is to be accounted for by the coldness of this month. I have not lost a single colony of the 51 packed up, and all outdoors.

John P. Coburn.

Woburn, Mass., March 26.

Bees Wintering Well.

Taken as a whole, Mr. Doolittle's report in the March number of the American Bee Journal applies to our locality in almost every particular. The main difference seems to be all in our favor. While he reports no good flight during winter, we had quite a number of good ones. One in particular was something uncommon. I do not remember the exact date, but it was about midwinter. We had a regular spring day. The thermometer registered above 60 degrees all day, and the weather was lovely. The air was full of bees all day long, and their buzzing reminded us of June or July.

All my bees are on the summer stands, snugly packed in chaff; the majority of them have sealed covers under 6 inches of chaff, and the remaining portion are packed with blankets, and chaff mats next to them. So far I can not see very much difference in wintering between the two methods. All seem to be doing well; every hive is clean and dry, and bees seem to be in a healthy condition. but as Mr. Doolittle says, the most trying months are yet to come. Don't count the chickens too early.

G. C. Greiner.

La Salle, N. Y., March 26.

Bee-Keeping in Alabama.

I have been among the bees for 2 years, and although yet a novice I find them more and more interesting every year.

Two years ago there came by our home a large swarm of bees which clustered on a near-by tree; we caught them and put them into a barrel, with a cross-stick in the center. The next day we made a hive with frames somewhat like the dove tailed hive, and transferred the bees from the barrel into the home-made hive. Although this was a large swarm they absconded within a few days.

I did not give up, but began to read about bees and found the more I read the more interested I became. In my search for reading matter, I came across a catalog of hives, etc., and ordered a beginner's outfit, which consisted of 5 hives and supplies for the same.

At first I thought there would be trouble in obtaining swarms, but I soon eliminated this, by offering 25 cents to any one who would inform us as to the whereabouts of a swarm, and in a short time I had the desired number.

A hive was always kept ready, with full sheets of foundation in frames, also a box was kept in readiness which contained smoker, veil, gloves and smoker-fuel. When we were informed as to where there was a swarm, the hive and box were placed in the buggy, the horse was hastily hitched up, and off we went for the "honey-gatherers." When the bees had been put into the hive and the top placed on, the hive was then lifted into the buggy, and soon another colony was in our bee-yard.

At the first of the season (1907) we cut a bee-tree and transferred the bees into a dovetailed hive. They were very weak at first, many of thm having been killed when the tree was cut, and extra care was given them as they were the first wild bees we had captured. A large part of the old brood-comb was cut and fitted into the frames which were given them, also frames of unsealed brood taken from other flourishing colonies. By caring for them in this way they were in fair condition at the close of the season. These bees were the blackest and worst about fighting of any in the apiary—they were known as "the fighters." When any one ventured near this hive he was sure to be attacked by them; although ill-disposed they were the most active workers in the yard. When I was ready to take off a super from the black bees I was quite sure that my smoker was burning perfectly, and my veil in good condition.

One day when I was watching the black bees I noticed some yellow ones coming out of the hive with them, and in about a year the whole colony had changed from black to yellow. They also changed in disposition, and now are the most quiet bees in the yard. At the first of the season (1908) I purchased a queen and introduced her, but in a few days she had absconded. Possibly she went into the hive of the blacks and took possession as she was a young queen, or the bees might have superseded her, as we gave them unsealed brood taken from hybrid-Italians.

Another colony which deserves comment—they are hybrid-Italians and last season produced 125 sections of honey.

All 10 of my hives have been wrapped with heavy paper and well protected from the weather, with plenty of honey to last through the winter months, and will be ready to start to work next season, with a large army of honey-gatherers.

Turning to the financial standpoint, I have gathered from 6 colonies 400 pounds of honey (not including that left over in frames). This was sold for 10 cents per pound, and yielded $40 on a $46 investment..

I purchased this year, from a dealer, 25 second-hand hives for half the original price; one coat of paint makes them look as good as new.

Next season I will move my bees to the prairies where the clover abounds.

J. Mason Handy.

Mt. Meigs, Ala., March 27.

Comb Honey Production.

This season, no doubt, many comb-honey producers will try the methods of our experts in this line. Mr. Myers, who has joined the great majority, practised the method of Dr. Miller. He cut out the queen-cells of his 8-frame double-walled Hilton-Langstroth hives, every 8 days, and could report a yield of 250 pounds of comb honey from one of his colonies, or all of them, I forget which. This shows that a mighty colony of bees will produce comb honey in sufficient quantities to pay well in Northern latitudes.

I have practised the method of Chapman, of Michigan, which consists in putting frames containing brood in a second story. At the commencement of the honey-flow a Porter bee-escape can be placed under the hive containing brood, when the hatching brood will descend into the brood sections. I know the bees will fill the sections by this method in a manner to gratify the comb-honey producer's heart. The old combs, especially those containing pollen, can be kept out of the brood chamber by this or the Dudley-Tube method, and one cause of swarming, according to Aspinwall, be removed.

One Ohio bee-keeper claimed to me to have gotten a splendid supply of comb honey last season by Doolittle's method, with the exception that he placed the frames of brood alongside the other, with a Dudley Tube connecting both. Mr. Williams has given his comb honey method, so the comb-honey gentlemen have plenty of methods to practise on this season.

Geo. T. Moloney.

Wolverine, Mich., March 27.

Colonies Weak—Poor White Clover Prospect.

The predictions I made last fall, from all indications at this date, will come true. First, bees will come through weak in numbers this spring. When I finished taking off comb honey last July, I never had colonies in a better condition, both in number of bees and amount of the honey in the brood-chamber for fall and winter. In fact, I thought the brood-chamber was filled too much with honey, that there would not be enough room for the bees to breed plenty of young bees in the fall, for we must have young bees hatched in September and October if we want good, strong colonies in the spring. Dry weather continued until cold weather, and the honey-flow was cut short. On examining them in September I found I would have to feed them, for they were short of honey, and had very little young brood. I commenced feeding sugar syrup to increase their stores for winter and stimulate them to breeding. The former I accomplished. The latter I failed in. I laid the failure to get them to breeding to the dry weather, drying the bloom so that they produced no pollen, for I could see them bring in very little of it.

The second prediction was that we would get no white clover honey in Southwestern Ohio this year. The summer and fall drouth killed all the white clover, and there was not enough moisture to sprout the clover seed last fall. At this date I am convinced that I was correct, for I have not been able to find the first white clover plant. Alsike clover has done better than white or red clover. It seems to stand both drouth and wet better than other clovers. People have just commenced raising it in this community, and find it makes a fine feed, and it can be raised on wet land that red clover will freeze out on. Up to this time I have lost 5 colonies out of 93.

J. G. Creighton.

Harrison, Ohio, March 29.

Early Brood-Rearing—Good Results per Colony.

Mr. Jas. W. Bell of Kentucky (page 73), is experimenting in attempting to rear brood during the months of January and February, by keeping a colony in his room at a temperature of 60 to 70 degrees. It seems to me that there should be no trouble to rear brood in his locality during either of these months, with bees on the summer stand. Brood-rearing is carried on as far north Wisconsin in double-walled hives during the month of February out-of-doors. I would think it much safer than in a warm room; certainly so this far north.

Mr. C. T. Willis of Illinois, gives a good account of his little apiary of 7 colonies (page 73). Fifteen dollars each from a few colonies would be a nice little nest-egg for some member of a family on a farm—a boy or a girl—to tuck away for some future use. For instance, to help out school expenses. I am sorry I knew so little about the bees when a boy on the farm, and at a time when I needed just that kind of help when anxious to go away to school.

I have a little story to tell on this same line of profits from a single colony of bees. About June 1, 1908, I divided a colony by taking away the queen and about half of the brood and bees from a 9-frame hive, filling the outside spaces of each with frames of foundation. The hive of the new colony was opened immediately, and, of course, the old bees returned to the parent hive. Without going into details, I will simply say, that from the made colony I sold 4 cases of honey for $16.00, and the colony for $10.00 in the fall. It took about half hour to make the colony, and about a half day to do the rest of the work.

Evanston, Ill. Wm. M. Whitney.

That Big Honey-Yield from One Colony and Its Increase.

Some time ago I received the following letter from Mr. G. W. Vangundy, which explains itself:

"On page 23 of the American Bee Journal, I see an item stating that you doubted that I obtained 1144 pounds of honey from one colony and its increase. I obtained the honey just the same. What would you say if I should tell you of a man who obtained 1800 pounds of honey from 2 colonies of bees, without the increase? Then you would say, 'There is something wrong somewhere,' if the American Bee Journal would print it.

"In conclusion, I wish to say that the American Bee Journal has not printed anything false in regard to the 1144 pounds of honey from one colony and its increase. I sold the honey at 6 cents a pound. It was extracted honey. It was a fine quality, and if I had a sample bottle I would send you some, just to let you know that we have a better quality of honey than you have in Illinois, or any other State. This is saying a good deal, but the proof of the pudding is in the [showing] eating."

In regard to doubting the truth of Mr. Vangundy's statement, I find nothing in the item that says any such thing. I am of the opinion that he thought that last paragraph was meant for him and the American Bee Journal. It says:

"In conclusion, I wish to say that I believe the best way to get the newspapers to stop publishing falsehoods about bees, honey, and temperance, is to help them (those that want the truth) to obtain and furnish truthful reading matter for their papers."

I do not consider the American Bee Journal a newspaper, or anything near it. Mr. Vangundy says, in regard to his methods of management, "My management is to feed the bees all they can eat of liquid honey. (Do not feed sugar syrup.) Honey is their natural food. I get my bees good and strong when the honey-flow comes." The bees are allowed to swarm once or twice, and then they are fed all the liquid honey they can eat.

I thank Mr. Vangundy for his kind letter, and possibly he will tell us some more of his methods in the future. While they may not be practical for bee-keepers in Illinois, it may help some other bee-keeper in a locality similar to his.

As to his honey being of better quality than we have in Illinois or any other State, I must say that "I don't know."

Hampshire, Ill. Chas. M. Hix.

Priority Rights and Bee-Keepers.

The February number of the American Bee Journal is a fine one if it did take a little longer time. But, it did amuse me to read the "Priority Rights" item on page 38. I always thought bee-keepers fair and just, and hate to think I have been mistaken. Suppose I or some one interested in bees should move down there in California and buy land and pay for it. What right would bee-keepers who had been there before I came, to say that I had no right to put my land to the use of keeping bees? If I bought 100 or 160 acres, should any man have the right (although perhaps he did not have any land) to prohibit me from putting my land to any use I desired? If they try the scheme laid out in that priority rights scheme, I do hope, for the sake of justice, that they will be defeated grandly.

Another way that seems just to me, would be to allow a settled number of colonies to each, according to the amount of land or bee-pasturage he had. That would be more like a square deal. The right of priority is not a right at all, and I am pretty sure that a law to that effect never will be made, or at least would not hold.

I remember in the old country, the cattle pasture was in common, but you would keep only so many head, according to the acres you were the owner of. Can any one say that that was not right?

Now, fellow bee-keepers, let us try to keep up the good reputation that bee-keepers have had for fair-mindedness and justice, and show the world that we can see the right of the other man as well as our own.

Bees around here have wintered fairly well, although we have had a pretty cold winter. One day the temperature was down to 10 degrees below zero, and that is pretty cold for here.

O. K. Rice.

Grays River, Wash., Feb. 25.

Bumble-Bees—Bees Too Forward.

On page 58, Rev. Mahin and Mr. Tillinghast each discuss the bumblebee. I was glad to see it, as we know very little of the bumblebee. In my experience I have found much of the experience of these gentlemen to be true, with the exception of the females going into the earth for the winter. I never saw, nor have I seen any one among our people that ever saw a bumble-bee in winter. We dig, we plow, we grub up bushes, all in the regular routine of farm work, and find many insects in the bosom of the earth for protection, but no bumble-bees, "yellow jackets" or "bell" hornets. The habits of the two last-named, as far as a preparation for perpetuation of species is concerned, are about the same, but we don't find them here in winter. The female wasps are plentiful. Any dead tree or an old house is, as a rule, their winter quarters. It is a curious thing about bumble-bees taking up their breeding-places in early spring.

I am a bird-lover, and put up homes for the titmouse, the bluebird, and house martin every year. The first-named bird makes her nest early, of wool and hair, in March, and by the time Mrs. Bumble-bee comes, she is quietly sitting on her eggs. Mrs. Bumble-bee generally goes in and takes possession of the cozy nest, and my beautiful little songster leaves me. Also, in my shed and out-houses where I store empty boxes, into rats' nests these bees go, and, in all probability, I don't find them until enough of those small workers are out and ready to go for me at the slightest interference.

Never can I forget my experience on the farm when breaking up a clover fallow in the summer or early fall. These things after being turned up by the plow would sting me and the horses so that I can never love them even if I wanted to. Often we had serious accidents as a result of those bees stinging horses that would run off with the plow and man. There are not many of them here now in the fields since but little red clover is grown, so they hunt breeding-places about buildings, etc.

The weather here in Virginia has been so warm this winter that trees have budded and even a few fruit-blossoms are out. But today (Feb. 25th), we have a cold, stormy northeasterly wind, that is calculated to remind everybody that old "King Winter" isn't gone yet. Our bees are entirely too forward in their operations. My hives, all of which are double (or a combination of 2 colonies), are filled with hatched, hatching and sealed brood, and lots of eggs—just about as they should be late in April—and are consuming more than double the honey they should consume at this time of the year. We fear too early swarming, with nothing to work on. We rarely ever have to feed our bees, so generally keep a small amount of honey on hand. But this season I don't know just how we will arrange. All depends upon a late spring or an early one. L. L. Brockwell.

Edlow, Va., Feb. 25.

He Wants to Know, You Know.

I couldn't do without the means of getting more knowledge of bees. I have read "A B C and X Y Z of Bee Culture," and Dadant's "Langstroth," and such are good to refer to, but it's the American Bee Journal that helps one to be up-to-date, with latest methods and short cuts. Also we get all sides of a question, and have a chance to put in our own, or if we think we know something. And then, when we have to ask some "green questions," how comforting it is to see some one else asking *greener ones yet.*

I looked into my hives at least once a week last summer, and I was *ashamed* to ask Dr. Miller if disturbing them so much was harmful, supposing, *of course,* it must be. (But I couldn't help it). And now then, isn't it worth a year's subscription just accidentally to learn from Mr. Williams' article on page 53, that *Dr. Miller himself does the same thing.* I think it is worth more, and so I'm sending you my renewal and enough for Dr. Miller's "Forty Years Among the Bees," too, and still I'm away ahead.

I was amused to read about a fellow down South in Kentucky keeping one colony in the house to "see if they wouldn't rear bees in winter," when just a few days before (February 20) I peeked into one of my single-walled hives on the summer stand, and found eggs, larvæ, and sealed brood, and that away out here where blizzards are supposed to "hatch" at this time of year.

Now, I have an idea, and have studied up a scheme to carry it out. In introducing, let the queen get at the combs and *lay in the cells* before the bees get to her. The idea is that if a queen can get to lay even 100 or so eggs, the bees will be more likely to accept her. I would like to have the opinions of some authorities as to whether there is anything in this idea or not. It seems reasonable to me, but it seems as if some one must have tried it long ago, although I have never read nor heard of it.

Louis Macey.

North Platte, Nebr., Feb. 27.

Wiring Frames—A Good Bee-Story.

As I am interested in bee-keeping I take pleasure in reading the American Bee Journal. I just received the February number, and it is the best of all. I have been keeping bees for a number of years, and when I read the American Bee Journal I feel a good deal like a little boy when he gets up in school to recite his first piece. I have both comb and extracted honey. I sell all at retail to friends and neighbors, and do not have enough to go around.

Last year was a poor honey season with us. One bee-keeper said it was the worst he ever experienced, and he has kept bees 28 years, and has as much as 11 or 12 tons in a season.

I agree with Mr. Greiner about wiring frames. I wire mine as tight as possible without springing them, as Mr. Greiner says a tight wire imbeds much easier than a slack one, and it certainly makes a stiffer comb to extract. I have a device of my own make for wiring frames, that allows no wasting or snarling of wire, and in the same time I can wire more frames. I wish I had the time to describe it to the dear sisters. It might help them to escape a divorce suit; but as I am a bachelor bee-keeper, maybe it would not do.

In regard to the Apiary Beautiful, I must say that I do not admire some of the pictures in the American Bee Journal. I know of an apiary of over 200 colonies that looks like a miniature city. The hives are set low on the ground, and in straight rows that lead up to the honey-house. The grass is kept cut as smooth as any lawn. When I saw them last fall they were all packed for winter, each one as trim and neat as a cottage in a suburb.

That story from Sweden Valley, Pa., reads as if there were honey on all sides of it.

It seems our sister bee-keepers take pleasure in the misfortunes of their "Dear Johns." I hope my brother bee-keepers will excuse me for telling what happened to a "John" of my acquaintance. It was something like this: A stray swarm came along, and "John" hived it in a box of some kind. A day or two after he thought he would move them to a better place, so he picked up the box and started with it. In some way his feet got tangled and down he went, box and all. When he arose, the bees arose with him, and commenced to sting for all they were worth. "John" at once started for the barn, and at the same time commenced to shed his apparel, so by the time he reached the barn he hadn't much left in the line of clothes, and what little he did have was tossed out the doors as soon as possible. He then began calling to his wife who was in the house trying to control the peals of laughter that would get the best of her in spite of all she could do. Pretty soon she heard him call, and she went out. There stood John with just his head projecting between the doors. Camly as possible she asked him what he wanted. "Go into the house and get me some clothes, and don't stand there and laugh!" he said. So she went to the house and got John a suit from head to foot. John quickly donned these and got to the house where his wife helped him dress his swollen hands and face. His wife, when telling me about it, said she believes she would have had to laugh if the bees had stung him to death.

I hope some of these days to become more of a professional bee-keeper, and then I will try to write something more worthy of the American Bee Journal.

Bachelor Bee-Keeper.

Good for the Caucasians.

If bee-keepers would only lay aside all prejudice and use the good common sense the Creator has given them, it would go a long way toward solving some of the most perplexing problems the young bee-keeper has to contend with. Selfishness, prejudice, and ignorance are the three prime factors which tend to keep the amateur bee-keeper at sea; as their writings are so conflicting that the beginner is at a loss to know where to draw the line. I notice in the Bee Journal, of not recent date, where a queen-breeder took up the "Big Stick" and gave the Caucasians a good dressing. Yet in the same issue he advertises Italian queens. Can a beginner draw any conclusions from such information?

On page 313 (1908) in the October number, a writer from Iowa says: "On September 10 I introduced a queen. About a week ago I opened the hive and found the entrance stopped with propolis," etc. Now let us look at this problem fairly. Could this queen have laid the eggs and reared the brood to have carried this propolis from September 10 until the "Old Reliable" went to press in October? Surely such reports are detrimental and altogether misleading. The real truth-seeker must take such reports for what they are worth. I often see where the truth-seekers ask about the Caucasians, and always get an answer from some one who, I honestly believe, has had no personal experience.

For 3 years I have in a small way tested the Caucasians side by side with the much-praised Red Clover (?) Italians. I purchased 5 Caucasian queens. I also had 3 colonies of Italians as above mentioned. But before I go farther I will say that three of the queens were just what the man from whom I bought them claimed they were—simply worthless. Only he "wrote them up" as Caucasians. If they were, they were not the kind sent out by the Agricultural Department at Washington, D. C. They were large workers with distinct yellow bands. The drones were larger than the Italians, with yellow markings also. I will not class them in my report, for they stored no surplus worth mentioning. The other two queens increased to 5 colonies, which produced 434 pounds of comb honey, or an average of nearly 88½ pounds each, or an average, taking spring count, of 217 pounds each. The 3 Italians increased to 8 colonies, and produced 228 pounds of comb honey, or an average of 28½ pounds, or an average, spring count, of 76 pounds. I take the above from my tabulated account, and it is no guess-work.

I requeened 6 of the Italian colonies with Caucasian queens. All the Caucasians are on the summer stands with plenty of stores gathered by themselves. The two remaining Italian colonies are in the cellar with a good supply of sugar syrup. Those who are actually seeking information concerning this new race of very gentle bees can draw their conclusions from what I say, or possibly use their own good judgment regardless of what any one may say pro or con. As for me, I would rather pay $5 for a good gray Caucasian queen than accept a "Clover" queen as a gift. Why? Look at my report and "figger" up at 16 2-3 cents per pound.

J. W. Blakely.

Morrow Co., Ohio, March 1.

No Spring Flight Yet.

It is cold here all the time now, so bees have had no spring flight yet.

Borodino, N. Y. G. M. Doolittle.

Bees in Strong Condition.

Bees are still in promising condition, very strong, with a fair amount of brood, and no signs of spring-dwindling so far.

G. C. Greiner.

La Salle, N. Y., April 5.

Wintered Pretty Well.

Bees have wintered pretty well, but I will have to feed as some will be short of stores. The weather is cold and windy every day.

D. H. Gathmann.

Forest City, Ill., April 3.

Excellent Prospects for Bees.

Bees are in demand, owing to the excellent prospect of an abundant yield of honey. In the valleys where willows, eucalyptus, and pepper are plentiful, bees have been gathering honey all winter. We have had 19 inches of rain, and more is now falling.

W. B. Thorne.

Burbank, Calif., March 30.

Some Heavy Winter Losses of Bees.

Winter losses in this vicinity are very heavy in the valley of the Platte River, from Denver to 30 miles down stream. Outside of this territory the losses are not much more than ordinarily, although we have had one of the longest winters on record.

Frank Rauchfuss.

Denver, Colo., March 31.

Bees Wintered Well.

March was mostly a cold, wet month. Today it is rainy with some snow, as was also yesterday. Bees have wintered unusually well. I think I have 2 queenless colonies, but I am expecting 2 queens today or tomorrow. I was quite successful with the Abbott or "lazy man's" plan of introducing queens last fall.

Leon, Iowa, April 2. Edwin Bevins.

An Evergreen Windbreak.

The Gardner Nursery Company, Osage Iowa, have been growing Hardy "Blizzard Belt" Evergreens for the past 40 years and have found from experience that they are as easily grown as the most common forest trees.

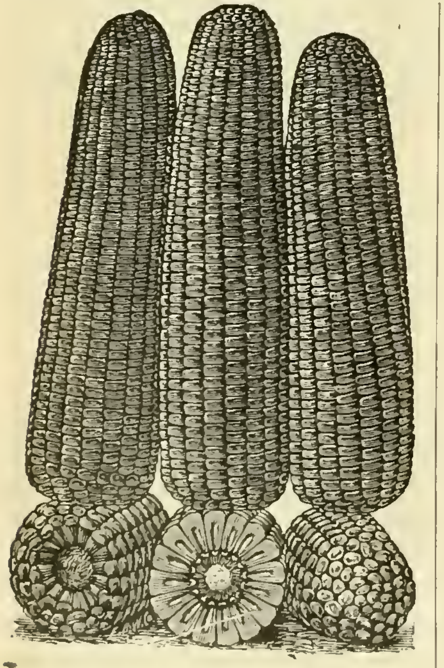
The cheapest and best way to get a successful Evergreen windbreak is to purchase from 500 to 1000 Hardy "Blizzard Belt" Evergreens ¼ to ½ foot tall and plant them out, at proper time in the spring, in a well prepared bed in your garden, and let them stay there two years, before planting into permanent windbreak quarters. Set the trees in a row across the bed 3 inches apart in row and rows 6 inches. A bed 4 feet wide and 16 feet long holds 500 trees.

In the beginning plan on setting more of the evergreens in bed than you will want for windbreak as the extra trees will come handy for setting in your lawn, along the street, or for making a fancy hedge or screen. Then if you still have some left you can easily get your original money back by selling your surplus to some of your neighbors who were not so beforehanded in their planning. No need of paying from $30 to $150 for an Evergreen Windbreak. Write today to THE GARDNER NURSERY COMPANY, Osage, Iowa, for their catalog and their EVERGREEN WINDBREAK offer in which they give you "A TREE FREE WITH EVERY ONE YOU BUY." They prepay express charges and guarantee safe arrival to your express office; also agree to replace any of the trees that might fail to grow, at one-half price, thus standing one-half of any possible loss and you the other half, which is a fair and reasonable basis. Mention the American Bee Journal when writing.

Gospel of Good Seed Corn.

The first seed dealers, we believe, to make a specialty of seed corn were the Iowa Seed Company, of Des Moines, Iowa. In 1881 they introduced the Profit Corn which originated on their seed farms in Madison County, and it was claimed at that time that it would produce more bushels of shelled corn per acre than any other corn in existence, and it held its reputation until they introduced the Iowa Silver Mine, which was sent out fourteen years later, in 1895. The last variety has proven throughout the country to be the most productive of any variety of corn ever brought out, owing to its pure-bred character, it is adapted to a wider range of climate and soils than any other sort.

They also introduced the Iowa Gold Mine, Star Lenocher's Homestead and Golden West, Early Longfellow Dent and Farmers Reliance which have all become standard sorts, the last two being extra early kinds, which will mature in about 90 days. The last variety which they introduced was the Prosperity Corn, a large solid-eared, yellow variety, and some prominent corn growers say that in this variety the climax has been reached, it being as near perfection as has ever been attained or as is apt to be attained for some years to come. While there may possibly be some varieties which will beat it in a show room at corn expositions, still as a practical, everyday profitable corn it will hold its own and come out ahead in the number of bushels to the acre.



The 9 varieties of corn introduced by this firm are all illustrated in colors in their catalog. The Iowa Seed Co., will send a free sample of their 3 leading varieties—the Prosperity, Iowa Silver Mine, and Farmers' Reliance—together with a copy of their large illustrated catalog to any of our readers who request it. Better write them today; a postal card request is sufficient. Be sure to mention the American Bee Journal when writing to them.

J. E. HAND will begin the season of 1909 with improved facilities for rearing the

CHOICEST QUEENS

He has developed a system of queen-rearing that contains all the best points of other methods with none of the defects, including some **valuable improvements** of his own—in short, a system through which the highest queen development is reached by **correct** and **scientific** principles, which means that he is now in position to offer to the bee-keeping public a **higher class of queens than has ever before been offered** by any breeder, owing to scientific methods which produce queens of a higher development than can be reared by the ordinary methods in vogue, and also to an **improved method of classifying queens** which strikes the word **select** from our list, and gives a **square deal to all.** No selects means no culls, and the highest grade of queens in the untested and tested classes. These queens will be reared from a superior strain of hardy Northern-bred **red clover Italians,** "the very best," and will be safely delivered to any address in the United States, Cuba, Canada or Mexico, at the following prices; Untested, $1.25: 3, $3.00. Warranted, $1.50: 3, $4.00. Tested, $2.00: 3, $5.00. Special prices on large orders. Valuable information free. Send for it to-day.

J. E. HAND, BIRMINGHAM, OHIO, ERIE CO.

Raspberries 25c to 35c a Quart.

It pays to be particular as to the varieties you plant, especially raspberries. It is just as easy to grow the profitable kind as it is the ordinary ones. The King Red Raspberry is acknowledged by all to be the best commercial red berry grown. It is making growers more money than any other kind. The fruit is the earliest of any of the red kinds, and firm enough to carry to any market! It is hardy, prolific, fine quality and splendid for the home garden also. Experiment stations highly recommend it. A good stock of plants is being offered at very reasonable prices by W. N. Scarff, New Castle, O. Catalog free. Mention the American Bee Journal when writing.

New Style Turnouts.

The new Buggy Style Book of the Ohio Carriage Mfg. Co., is fresh from the hands of the printers. It illustrates the many new and unusually stylish rigs, which Pres. H. C. Phelps is offering this year to his "factory-to-home" patrons. Among the 125 styles of Split Hickory Vehicles there are many new and effective ideas, as well as the best development of approved standard styles. The Ohio Carriage Mfg. Company sells direct to the purchaser, cutting out jobber, wholesaler and retail dealer. It makes a special and liberal offer of 30 Days Free Road Test with the privilege of returning the buggy in case of dissatisfaction on any point. Their Split Hickory Vehicles are guaranteed for two year's time.

Our readers who are interested in any way in buggies should certainly send for this handsome and complete new catalog, free. Address, H. C. Phelps, Pres., Ohio Carriage Mfg. Co., Station 322, Columbus, Ohio.

Raising Big Crops of Strawberries.

If the farmers in this country only knew how profitable a crop of strawberries are as compared to other crops and farm pursuits, I am sure more of them would be big growers of this luscious fruit. Another thing, if they knew the difference in the amount of work, they would be even more interested, because strawberries do not require the work that many other things do, and which pay less profit.

I would as soon have the proceeds from an acre of strawberries, cared for as I know how to care for them, as the proceeds from ten good cows. You don't have to tend strawberries in the winter—they care for themselves, but you do have to tend and milk the cows. It don't cost much for strawberry plants, but cows come high just now. There is no crop that is quite as profitable, all things considered and then, too, think of the delight in having for your own use such delicious fruit in abundance.

Any good soil that will grow either corn or potatoes will grow strawberries. I advise planting after two or three crops of corn have been planted on the same land. It should be drained thoroughly, as undrained land is undesirable and wet induces fungus growth—the worst enemy of the strawberry. The growing of corn and potatoes, as above mentioned, also tends to eradicate grubs—the worst insect enemy.

Apply barn manure to the corn or potato crops, thus getting the soil thoroughly incorporated with humus before setting the plants. I prefer spring planting at the time other crops are put in the ground. Set in rows, three to five feet apart, and plants one to two feet apart. See that the roots are set down straight and as deep as they were formerly. Keep ground clear of weeds until growth stops in the fall.

1908
CATALOGUE
L. J. FARMER
Pulaski

In fertilizers I recommend only concentrated or commercial fertilizers and from 500 to 2000 pounds per acre, depending on the richness of the soil. Put on 1-3 before planting, 1-3 while growing first year, and last 1-3 in following spring before fruiting.

The yields of strawberry fields are often immense—the profits, too. I have heard of people getting 25,000 quarts from an acre. I have grown the "Parker Earle" and the "Crescent" at the rate of 15,000 quarts. Growers in my country think nothing of getting $500 to $1000 worth to the acre. I know of men who were flat financially a few years ago, who today are well-to-do—mortgages paid off and have money in the bank. They did it on strawberries.

I have published a book telling about it, and will be glad to send you a copy free if you'll mention this paper. L. J. FARMER.
Box 240, Pulaski, N. Y.

DID YOU

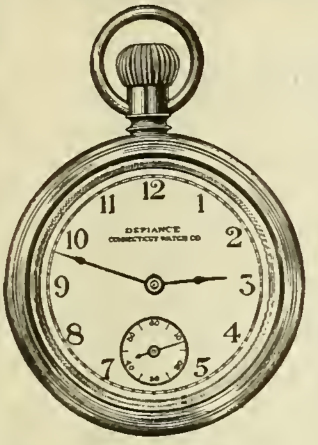
Ever stop to think what a good investment a few good queens would be? I send out no inferior queens. All my queens are selected, as I kill all that are no good. If you want one or 100, write me. 11Atf

S. F. TREGO, Swedona, Ill.

SURE, the rich have the same sorrows as I have, an' not as manny throubles, p'raps, to take the sting out iv their sorrows. I'd be weepin' in me apron half th' day, thinkin' about me age, if I didn't have to be thinkin' iv th' rent.

—Mr. Dooley.

A Good Watch Free as a Premium



This watch is stem wind and pendant set. It is made to meet the popular demand for an **accurate** timekeeper at a **low cost.**

It is open face, heavy beveled crystal. Bezel snaps on. Lantern pinions, American lever escapement, polished spring encased in barrel. Short wind and long run—30 to 36 hours in one winding. The manufacturers give the following warranty:

1. To be in perfect running condition when it leaves the factory.
2. To be correct in material and workmanship.
3. Repairs will be made, not necessitated by carelessness or abuse, during one year from date watch is bought, if it is returned to them with 5 cents enclosed for return postage.

An Easy Way to Get This Watch Free

Send us **4 new** subscribers to the American Bee Journal at 75 cents each, and we will mail
Watch **free** as a premium. Or, we w
the American Bee Journal one
$1.60. Or, send us $1.10
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Complete stock on hand, as our plant has been running steadily so as to take care of the demand for **Bee-Supplies** the early part of the coming season. We are practically overstocked at this time and advise those in need of **Bee-Supplies** to order now (shipments may be delayed until you want the goods) before the contemplated advance in prices all along the line. Lumber is dearer and labor has never been so high, but we agree to protect our patrons at present prices upon receipt of their orders at this time.

It will cost you only one cent for a postal card to get our **delivered prices on Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Foundation, Smokers, Extractors, Shipping-cases, etc.** It may mean a saving to you of many dollars. It is the natural advantage we have over others that enables us to make you the Best Price. There are no better goods than ours, and we GUARANTEE SATISFACTION or REFUND your MONEY.

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The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

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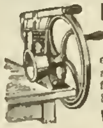

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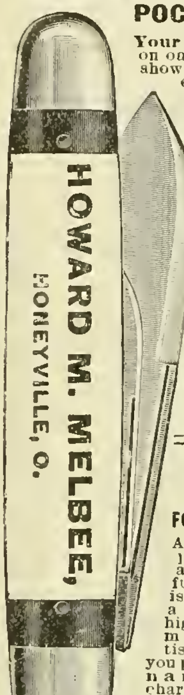

Your name and address put on one side of the handle as shown in cut, and on the other side pictures of a queen-bee, a worker, and a drone. The handle is celluloid and transparent, through which is seen your name. If you lose this knife it can be returned to you, or serves to identify you if you happen to be injured fatally, or are unconscious. Cut is exact size. Be sure to write exact name and address. Knife delivered in two weeks. Price of knife alone, postpaid, $1.25, With year's subscription, $1.75. **Free** for 4 new 75c subscriptions.

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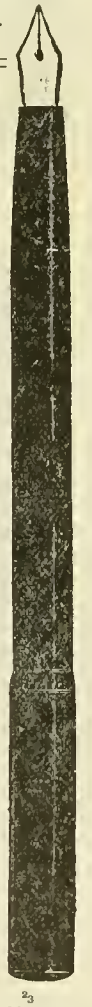

⅔ Size.

A really good pen. As far as true usefulness goes is equal to any any of the higher-priced, much-advertised pens. If you pay more it's **name** you're charged for. The Gold Nib is guaranteed 14 Karat gold, Iridium pointed. The holder is hard rubber, handsomely finished. The cover fits snugly, and can't slip off because it slightly wedges over the barrel at either end. This pen is nonleakable. It is very easily cleaned, the pen-point and feeder being quickly removed. The simple feeder gives a uniform supply of ink to the pen-point without dropping, blotting or spotting. Every bee-keeper ought to carry one in his vest-pocket. Comes in box with directions and filler. Each pen guaranteed. Here shown two-thirds actual size.

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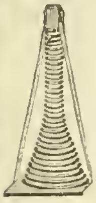

The Monette Queen-Clipping Device is a fine thing for use in catching and clipping Queens' wings. Four and one-half inches high. It is used by many bee-keepers. Full printed directions sent with each one.

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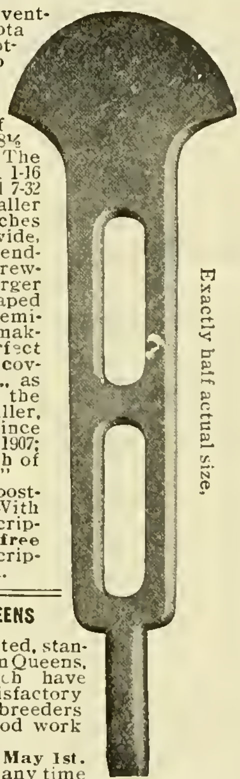

Exactly half actual size.

A special tool invented by a Minnesota bee-keeper, adapted for prying up supers and for general work around the apiary. Made of malleable iron, 8¼ inches long. The middle part is 1 1-16 inches wide and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screw-driver. The larger end is wedge-shaped having a sharp, semicircular edge, making it almost perfect for prying up covers, supers, etc., as it does not mar the wood. Dr. Miller, who has used it since 1903 says, Jan. 7, 1907; "I think as much of the tool as ever."

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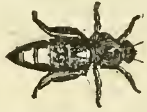

These are untested, standard-bred Italian Queens, reports of which have been highly satisfactory They are active breeders and produce good workers.

Sent only after May 1st. Orders booked any time for queens. Safe delivery guaranteed. Price, 75 cents each, 6 for $4.00, or 12 for $7.50. One queen with a year's subscription, $1.20. Queen **free** for 3 new 75c subscriptions.

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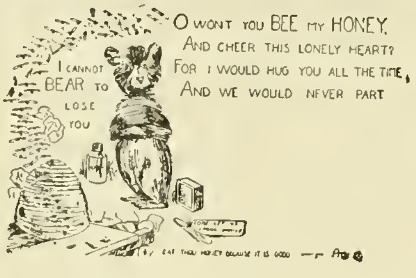
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AND CHEER THIS LONELY HEART?
FOR I WOULD HUG YOU ALL THE TIME,
AND WE WOULD NEVER PART
I CANNOT BEAR TO LOSE YOU
EAT THOU HONEY BECAUSE IT IS GOOD — PR

A "Teddy Bear" on good terms with everybody, including the bees swarming out of the old-fashioned "skep." Size 3½x5½, printed in four colors. Blank space 1½x3 inches for writing. Prices—3 postpaid, 10 cents; 10 for 25 cents. Ten with a year's subscription, 90 cents. Six **given free for one new** 75c subscription.

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Our stock is Northern-bred and hardy.

Our five yards Winter on Summer stands with practically no loss.

One of our customers tells us he has become one of the largest honey-producers of the West and says that in a great measure his success is due to our stock.

Prices before July 1	1	6	12
Select queens	$1 00	$5 00	$9 00
Tested queens	1 50	8 00	15 00
Select tested queens	2 00	10 00	18 00
Breeders	4 00		
Golden five-band breeders	6 00		
Two-comb nuclei, no queen	2 50	14 00	25 00
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Full colonies on eight frames	6 00	30 00	

Add the price of whatever queen is wanted with nuclei or colonies. Queens ready April 1st, bees May 10th. Safe arrival and pure mating guaranteed. Circular and testimonials free.

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Reared from the best selected red-clover mothers. My queens are all reared by the bees, as they far better understand the job than I. I use no artificial plan. All queens large and well developed, such as will, with proper management, fill an ordinary hive full of eggs and brood in ten days.

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Untested queens	1,	$ 75 ;	6,	$ 4.20
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1-frame nucleus with untested q'n.	1,	1.75 ;	6,	10.20
2-frame nucleus with untested q'n.	1,	2.25 ;	6,	13.20
1-frame nucleus with tested queen.	1,	2.00 ;	6,	11.70
2-frame nucleus with tested queen.	1,	2.50 ;	6,	14.70
Full colonies, untested queen				4.75
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6 Queens	5.00
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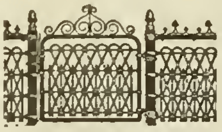

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We will send the above Almanac, a year's subscription to the Garden Magazine (a grand monthly) and the American Bee Journal for a year—all 3 for only $1.75. Address,

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are the result of careful selection and breeding from the best honey-gathering strains of superior long-tongue Italians. Our methods will produce perfectly-developed, long-lived and prolific queens. If you want bees that will winter well, build up rapidly in the Spring, and roll in the honey, our queens will produce them.

We are now booking orders which will be filled in regular rotation, beginning May 1st. You should get in line by placing your orders early.

Single queens—golden or three-banded—$1.00; 6, $5.00; 12, $9.00.

Safe delivery and satisfaction guaranteed.

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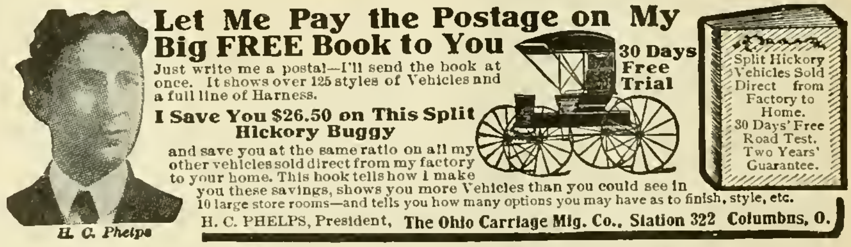

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with illustrated lessons on Cutting and Dressmaking, **FREE,** and I will sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

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Send me 25c and I will send you the **Farmer's Call every week for one year** (about 1000 pages) and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts. because I buy them by the thousand and don't make any profit. I don't want any profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY.

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Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

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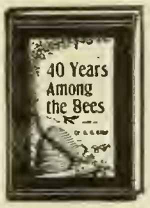

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THIS book of over 340 pages tells just how Dr. Miller manages his apiaries to produce the most honey, which, in turn, brings the most money. Dr. Miller has been "at it" some 45 years, and so is competent to tell others the best way to be successful with bees. In 1903 his crop of comb honey was over 18,000 pounds, and he is not located in the best honey-producing part of the United States, either—Northwestern Illinois.

The book is bound in substantial cloth, gold-lettered, and is sent postpaid for only $1.00; or with the American Bee Journal one year for $1.50. (Or send us 4 new subscriptions to the Bee Journal—with $3.00—and we will mail you the book **free** as a premium.) Every bee-keeper ought to have both the book and the Bee Journal, if not already possessors of them.

As Dr. Miller gets a royalty on his book—so many cents on each copy sold—every bee-keeper who buys it is thus helping a little to repay him for his effort to lead others to success through his writings on bee-culture.

As we have a good stock of these books on hand, **we can fill all orders by return mail.** This is the time of year to read up on bee-keeping. Better send us your order at once for Dr. Miller's book, and study it carefully so as to make the most of the bee-season. Address,

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40 Years Among the Bees

40 Years Among the Bees

Chick Culture

is a new book by A. A. Brigham, Ph. D. It contains no fool theories, no crazy systems—just common-sense. It starts with the mating of the stock birds and the setting of the eggs, and carries the reader straight through to the mature fowl. One chapter for each month—80 pages; fully illustrated. Price, 50c with a year's subscription to "Poultry Husbandry."

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Stop--Look--Listen!

If you want to improve your bees you should try at least ½ doz. of our famous long-tongued Italian Red Clover Queens, bred for business only. Will guarantee them to be equal to the very best queens bred in the U. S. Have been a queen-breeder for 20 years. Untested queens, after May 10, 75 cts each; ½ doz., $4.00. Tested, $1.25 each; ½ doz., $7.00. Nuclei and full colonies in the season. Send for free catalog of Bees and Queens. 4Atf

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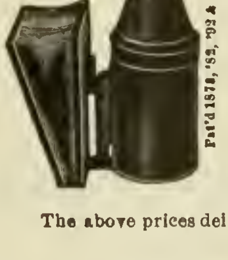

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All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

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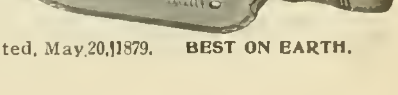

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When we announced the completion of the new edition late in 1907 there was a good deal of satisfaction to notice the big bunch of orders on hand, although we did regret the unavoidable delay in getting the books to some customers who had waited patiently for months. Over two thousand copies of this edition have already been sent out. We believe all urgent orders have been filled. We felt that the change of price to $1.50 postpaid might cause a little slackening in the demand. Not so, however, for in all our experience the orders never came faster.

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Each issue is very fully illustrated. The covers are done by the finest engravers in Chicago, and our writers are the best in the land. Besides dozens of writers of prominence whose names we can't even mention for lack of space, we have such men as Dr. E. F. Phillips, U. S. Dept. of Agriculture; Dr. Edward F. Bigelow, Associate Editor St. Nicholas; F. Dundas Todd, former Editor Photo-Beacon; Allen Latham, Connecticut, etc.

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For large apiaries, or where the honey comes with a rush and labor is scarce, you should investigate our power machines. A circular of these will be sent on request.

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Choice White Wyandottes

15 eggs, $1.00; 30 eggs, $1.50.

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11 eggs, $1.00; 22 eggs, $1.50.

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Italian Bees for Sale

1 colony, $5; 2 for $9; 5 for $20. Queens—Untested, 75c each; 6 for $4; Tested, $1 each; 6 for $5. Will put colonies into any style hive to suit purchaser.

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are constructed with a view of enriching the giver at the expense of the consumer. **Bee-Talk** is sold for 10 cents because it contains valuable information for all classes of bee-keepers. W. H. Putnam, River Falls, Wis.

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Air-Spaced

Hives are the best all-the-year hives for the bee-keeper who uses no bee-cellar. Can be packed with chaff if desired.

"Sections"
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Of the highest quality, a trial order will convince.

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Highest price in cash or supplies. Write for Catalog of full line of our Bee-Keepers' Supplies. Feb. discount, 3 percent.

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Headquarters for Bee-Supplies

ROOT'S GOODS

At Root's Factory Prices

Notice:-

We have a new stock of goods on hand for 1909 and are able to fill your orders, *without delay*, at factory prices.

SO send a list of the supplies you need, and we will be glad to quote you our best prices.

DO 1T NOW and secure our **Special Early-order Discounts. If you care** to save on freight charges, send your orders to us. No charges for drayage.

On account of the death of my father, Mr. C. H. W. Weber, it is necessary to make it understood that the business will be conducted the same as usual; there will be no change whatever. Soliciting your patronage, I am,
Yours truly, CHAS. H. WEBER.

C. H. W. WEBER CINCINNATI ...OHIO...
Office and Salesrooms, 2146-48 Central Ave. Warehouses. Freeman and Central Aves.

Honey and Beeswax

CHICAGO, March 29.—The demand for honey during the past month has not been equal to the offerings, which are at present in excess of any previous year at this time. The consumption has not equaled our expectations in view of the quality, which has seldom been equaled. The prices are without change from the last issue, but are weak. Beeswax is strong at 30c.
R. A. BURNETT & CO.

BOSTON, April 1.—We quote: Fancy white comb honey, 15c; No. 1, 14c; white extracted, 8 1-2c; light amber, 7 1-2c. Beeswax, 30c.
BLAKE, LEE CO.

LOS ANGELES, April 6.—Water-white extracted, 8c; white, 7 1-2c; light amber, 7c; amber, 5c. Fancy white comb, 16c; No. 1 white, 15c; fancy light amber, 14c; No. 1 light amber, 12 1-2c.
H. J. MERCER.

CINCINNATI, March 29.—The market on comb honey here is bare of fancy comb honey. There is considerable off-grade honey on the market, but no demand. Extracted honey fair; white sage at 9c in 60-lb. cans; amber in barrels at 6 and 6 1-2c. Beeswax is moving fair at $33 per 100 lbs.
C. H. W. WEBER.

TOLEDO, March 30.—The market on comb honey remains about the same as last quotations. Stocks are not moving very rapidly, and owing to some producers who have held their honey since last fall, and pushing it on the market has a tendency to break the prices. Fancy comb, 14 1-2 to 15c; No. 1, 14 to 14 1-2c. Extracted white clover is in fair demand at at 7 to 7 1-2c in cans; alfalfa, 6 to 6 1-2c; amber honey, 6 to 6 1-2c. Beeswax, 26 to 28c.
THE GRIGGS BROS. & NICHOLS CO.

INDIANAPOLIS, March 27.—There is a favorable demand for best grades of both comb and extracted honey. Stock held by jobbing houses is rapidly decreasing, and very little is now being offered by producers. I note some arrivals of fancy white comb at 12 1-2c, and No. 1 at 12c; white clover extracted in 5-gallon cans at 7c. Some amber honey is being offered, but the demand does not justify and established price. Beeswax is steady at 29c cash, or 31c in exchange for goods.
WALTER S. POUDER.

KANSAS CITY, MO., April 5.—We have nothing new to report on the condition of the honey market, except that we are having a little better demand for both comb and extracted. We quote: No. 1 white comb, 24 sections, $2.65 per case; No. 2 white and amber, $2.25 to $2.40. Extracted, white, per lb., 7 to 7 1-2c; amber, 6 to 6 1-2c. Beeswax, 25 to 28c.
C C. CLEMONS PROD. CO.

ZANESVILLE, OHIO, March 30.—There is some demand for honey though the market is still rather inactive. Best white clover comb honey would bring on arrival 13 to 14c. and sells in a wholesale way at 15 to 16 1-2c. Best extracted wholesales at 9 1-2c. For beeswax I offer 30c in cash or 32c in exchange for bee-supplies.
EDMUND W. PEIRCE.

NEW YORK, March 29.—There are no new features whatsoever in regard to comb honey. Some little demand for fancy white stock, but no demand for off grades. As said before, we cannot encourage shipments at this time. Prices are regular. Extracted honey in fairly good demand with sufficient supply. We quote: California white, 8 1-2 to 9c; light amber, 7 1-2c to 8c; amber, 6 1-2 to 7c. Southern and West India, in barrels, 60 to 70c a gallon, according to quality. Beeswax steady at from 29 to 30c.
HILDRETH & SEGELKEN.

DENVER, March 31.—We quote our local market as follows: No. 1 white comb honey, strictly fancy stock, per case of 24 sections, $3.25; No. 1 light amber, $3.00 per case; No. 2, $2.75 per case. Partly granulated comb honey sells from $2.40 per case down, according to its condition. Extracted, white, 8½ to 9c per lb.; light amber, 7 1-2 to 8c; strained amber, 6 1-2 to 7c. Our market is overstocked, and in all probability some honey will be carried over. We pay 25c per pound for average yellow beeswax, delivered here.
THE COLO. HONEY PRODUCERS' ASS'N.

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We will Buy and Sell

HONEY

of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for

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That's what backs up the name, and the **quality** is backed by 30 years of successful experience in foundation making.

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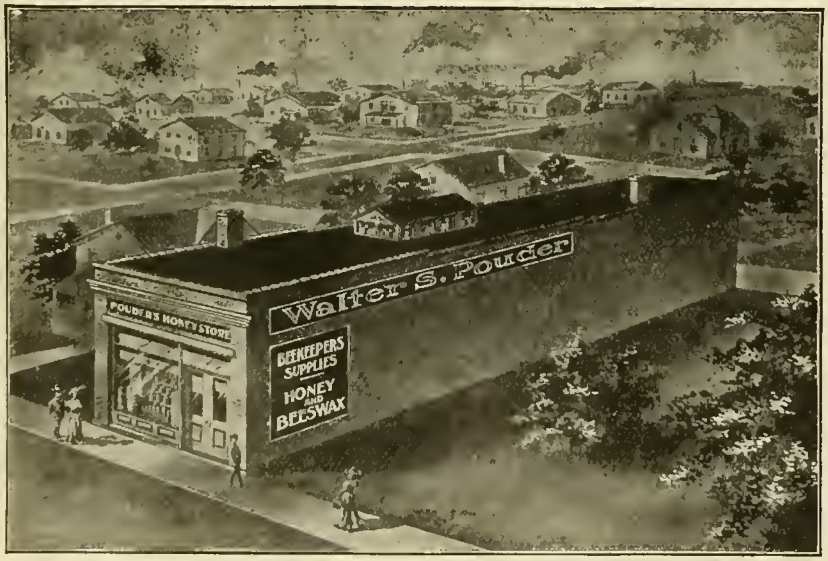

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Do not measure your distance from me in miles, but in the time it takes to get results. Modern transportation facilities have annihilated distance. Indianapolis is the "Pivot City."

I handle Root's goods and sell at the factory schedule. I carry a full line of their standard goods, and when your order reaches me the goods are shipped promptly, and I do not have to go out and buy the goods with which to fill your order. A stock of several car loads is right here ready for immediate shipment at all times.

Why does Pouder service excel? Because it represents twenty years of study and experience, aided by the most capable men as helpers and the finest goods that money can buy. My new store room, built for the exclusive use of the supply business, is a wonderful aid for the progressive methods now required in handling my growing business. The building has every modern convenience and equipment for handling the business and for giving proper care to the storage of goods in stock. The building too, speaks for itself, indicating the kind and co-operative spirit that has been shown by the fraternity since the beginning of my business as a supply-dealer. Bee-keepers, in passing through the "Pivot City," are earnestly requested to visit my new store-room and see for themselves the stock of nice, clean goods that are required in an up-to-date bee-supply house. I am located in the business district and four car-lines pass my door.

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49th Year
No. 5

May, 1909

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"The Golden Apiary," at Dodge City, Kan.—(See page 168.)

Apiary of C. H. Voigt, of Tisch Mills, Wis.—(See page 168.)

THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY

GEORGE W. YORK & COMPANY

118 W. Jackson Blvd., Chicago, Ill.

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1st.—To promote the interests of its members.

2d.—To protect and defend its members in their awful rights.

3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

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This is a pamphlet, 6x9 inches, containing 10 songs (words and music) written specially for bee-keepers, by Hon. Eugene Secor, Dr. C. C. Miller, and others. They are arranged for either organ or piano. The list includes the following: "Bee-Keepers' Reunion Song;" "The Bee-Keeper's Lullaby;" "The Hum of the Bees in the Apple-Bloom;" "The Humming of the Bees;" "Buckwheat Cakes and Honey;" "Dot Happy Bee-Man;" "Bee-Keepers' Convention Song;" "The Busy, Buzzing Bees:" "Spring-Time Joys;" and "Convention Song." The pamphlet is mailed for 25 cents, or sent with the American Bee Journal one year—both for only 90 cents. Send all orders to the American Bee Journal, 118 W. Jackson, Chicago, Ill.

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$4.00 for 6 queens; $2.10 for 3; or 75c for

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Nemaha, Co., Kan., July 15, 1905.

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GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best. She keeps 9½ Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
Ontario, Canada, July 22, 1905.

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GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of my best colonies. N. P. OGLESBY.
Washington Co., Va., July 22, 1905.

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GEORGE W. YORK & CO.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. MCCOLM.
Marion Co., Ill., July 13.

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Bred from superior golden stock last season; now ready to mail. Their bees are hustlers and beauties. These breeders are as good as money can buy. They are simply fine. Their bees are very gentle to handle—$5.00 to $10.00 each; untested queens ready to mail after April 15. Golden and leather or three-banded stock. Our long experience as a queen-breeder is a guarantee that our queens are as good as the best. Untested, $1.00; 6 for $5.00; 12 for $9.00; tested, $1.50; select tested, $2.50; best, $5.00. This season's rearing. Write for prices on a large number.

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Price-List for America (1909)

One selected fertilized Italian Queen, warranted pure and right mated, in May, $1.40; in June, July, August and September, $1.30.

12 Queens, in May, 14.00; in June, July, August and September, $12.00.

One extra-selected Italian Breeding Queen, in May, June, July, August and September, $3.00.

Advertisement.—In Italy we have but one race of bees; so there is no danger of getting into hybrids. I have never had in my apiaries a single case of foul brood (which is scarcely to be found in this country). So my customers must never have any fear of contagion from my bees. All my queens are reared from extra-selected breeding-queens most carefully tested.

Conditions.—Cash with orders. I send queens post free. In October I don't send queens. The queens that die on the journey will be replaced provided they are sent back immediately in their boxes. Purchasers are earnestly requested to write their addresses very clearly. A letter can be lost by the post; so the customers whose letters remain unanswered are requested to write again for explanation.

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For all frames and sections.
$5 to $35

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One Untested Queen	$0.90
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One Comb Nucleus—no Queen	.95

Safe arrival guaranteed. For price on larger quantities and description of each grade of Queens send for Catalog. All Queens by return mail. A limited quantity of Comb Foundation. Send for sample.

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Full Colonies and Nuclei

FOR SALE

We offer for delivery any time after April 15, full colonies of Italian Bees, in 8-frame hives, at $7.00 per colony, including queen; or in lots of 5 or more colonies, at $6.50 each.

Nuclei—3-frame, with queen, at $3.50 each; or in lots of 5 or more, $3.25 each. Nucleus orders to be filled about May 10.

The above prices are f. o b. express, shipping point 100 miles west of Chicago. Orders filled in rotation. Satisfaction guaranteed. Address,

GEORGE W. YORK & CO.,
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Superior Italian Queens

By return mail after June 1st or your money back. Bred from best **Red Clover** working strains in U. S. No better hustlers, gentle, and winter excellent. Untested, from my three-banded **Superior Breeder**—1, $1.00; 6, $5.00; 12, $9.00; after July 1st, 1, 75c; 6, $4.00; 12, $7.50. Special price on 50 or more.

Safe arrival and satisfaction guaranteed. Circulars free. 4Atf

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Mr. Doolittle's book also gives his method of producing comb honey, and the care of same; his management of swarming, weak colonies, etc. It is a book of 126 pages, and is mailed at the following prices: Bound in cloth, $1.00; bound in leatherette, 75 cents.

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Every bee-keeper should have a copy of Mr. Doolittle's book, as he is one of the standard authorities of the world on the subject of queen-rearing and everything else connected with bee-keeping and honey-production.

George W. York & Co., 118 W. Jackson Blvd., Chicago, Ill.

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Our stock is Northern-bred and hardy.

Our five yards Winter on Summer stands with practically no loss.

One of our customers tells us he has become one of the largest honey-producers of the West and says that in a great measure his success is due to our stock.

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Select queens	$1 00	$5 00	$9 00
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Select tested queens	2 00	10 00	18 00
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Golden five-band breeders	6 00		
Two-comb nuclei, no queen	2 50	14 00	25 00
Three-comb nuclei	3 50	20 00	35 00
Full colonies on eight frames	6 00	30 00	

Add the price of whatever queen is wanted with nuclei or colonies. Queens ready April 1st, bees May 10th. Safe arrival and pure mating guaranteed. Circular and testimonials free.

Quirin-the-Queen-Breeder, Bellevue, O.

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FREE OFFER

NOT CHEAP QUEENS, BUT QUEENS CHEAP.

Reared from the best selected red-clover mothers. My queens are all reared by the bees, as they far better understand the job than I. I use no artificial plan. All queens large and well developed, such as will, with proper management, fill an ordinary hive full of eggs and brood in ten days.

Directions for building up weak colonies with my queens, 10c.

Prices of Extra Selected Three-Band Bees and Queens.

Untested queens	1,	$ 75 ;	6,	$ 4.20
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Breeder	1,	5.00 ;	3,	12.00
1-frame nucleus with untested q'n.	1,	1.75 ;	6,	10.20
2-frame nucleus with untested q'n.	1,	2.25 ;	6,	13.20
1-frame nucleus with tested queen.	1,	2.00 ;	6,	11.70
2-frame nucleus with tested queen.	1,	2.50 ;	6,	14.70
Full colonies, untested queen				4.75
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Prices of Extra Selected Five-Band or Golden Italian Queens.

Untested queens	1,	$ 1.00 ;	6,	$ 5.70
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Breeder	1,	10.00 ;	3,	24.00

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Select Queens	$1.00	$5.00	$ 9.00
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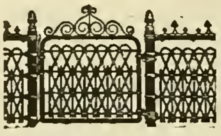

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The late E. L. Pratt (Swarthmore) used 50 of my Goldens in 1908, and wanted several hundred this season. My clover stock originated from the leather-colored Italian bee of Northern Italy, and has never been surpassed in the production of honey and its many other good qualities.

Price of Queens: 75 cents each; 3 for $2.00; 6 for $3.75; $7.00 per doz. Tested $1.25 each. Nucleus with young queen on 2 frames, $2.50, June 1st. All queens guaranteed to reach buyer in good condition.

Circular free. 5Atf

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The Blue-Ribbon Winners

Will be ready early in April. Let me book your order now for April, May and June delivery.

—PRICES—

Untested, each,	75 cts.;	per doz.,	$ 8.
Tested, "	$1.25 "	" "	12.

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AMERICAN BEE JOURNAL
L.L. LANGSTROTH
HAS. DADANT

(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

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GEORGE W. YORK, Editor | CHICAGO, ILL., MAY, 1909 | Vol. XLIX—No. 5

Editorial Notes and Comments

How About White Clover?

There seems unusual interest this year in the question as to whether there will be a white-clover crop this year. Some hold that it was so dry last summer or fall that a failure will follow. Others expect a crop in spite of the drouth. The Bee-Keepers' Review quotes Prof. W. J. Beal, of the Michigan Agricultural College, as saying:

> White clover will blossom and bear seeds every year if the conditions are favorable. If we have a cool, wet spring, white clover will be abundant; if dry in May and June, the crop will not amount to anything. How it will be about the growth of the seed this spring that fell upon the ground last June is uncertain. In places where the plants throve last year, you may expect them again this year, as good, if the season is favorable."

Editor Hutchinson says: "We may theorize all we please, but when the drouth of the autumn is followed by a honey-dearth the next year, not only one year, but year after year, it practically settles the matter in my mind."

Well, we do not need to wait very long to know what white clover will do this year. Certainly there was drouth last fall over a large area. Will there be a good growth of clover over that area? And if so, will there be nectar in the blossoms?

Large Average from Few Colonies

Every now and then some beginner reports an average yield per colony quite beyond that of many more experienced bee-keepers. Some have attributed this to the intense enthusiasm of the beginner. But the enthusiasm of the genuine bee-keeper does not fade out with the passing of the years. Even if it did, the enthusiasm of the beginner would hardly offset the skill and experience of the veteran. The difference is to be rather in the fact that the beginner having only a few colonies, his bees have a better chance at pasturage. M. V. Facey says in the Bee-keepers' Review:

> "In 1906, which was rather a good year in this locality, the colonies in my yards considerably exceeded 100 pounds per colony, but farmers' bees, with only a few swarms in a place, handled under my directions, netted over 200 pounds, while one man's bees (only two colonies) yielded 540 pounds, although of only ordinary strength in the spring. I have invariably found that, as a rule, to have a few bees in a place will exceed in results, per colony, the yield of a yard of, say 15 or 100 colonies, about 33 percent."

The explanation is easy. Suppose 100 colonies in an apiary where white clover is the main source. The surplus will be stored in the space of 2 to 6 weeks. At other times no surplus will be stored, although quite a bit of honey is gathered and used by the bees for their own needs. Now suppose there are only 2 colonies instead of 100. In that case it may happen that the bees will be able to store a surplus during 8 to 10 weeks, and of course that will greatly increase the average per colony. But the yield *per colony* is not the most important thing. It is more profitable for most to have an average of 50 pounds per colony from 100 colonies than to have an average of 200 pounds from 2 colonies.

Slow Cooling of Beeswax

At one time the American Bee Journal was criticised severely for advising that beeswax should be cooled slowly in order to have best quality. However severe the censure, there was comfort in the thought that the suffering was in a just cause. There is now additional comfort in finding that so good an authority as Mr. Thos. W. Cowan in his new book, "Wax Craft," endorses the views then given. On page 61 he says:

> "The scum is then taken off, the copper covered over with cloths, and the water and wax are allowed to cool as slowly as possible, for the slower in cooling the more refined the wax becomes."

To be sure, one might say, "Keep the wax hot a long time, so as to allow plenty of time for impurities to settle," for that would leave the wax just as clear as slow cooling, but rapid cooling afterward would not be so well on another account. For if the wax cooled rapidly, the outside becomes solid first, and the cake cracks. To avoid this, Mr. Cowan again prescribes "slow cooling," saying, (page 72):

> "The whole of the wax and water from the press is then poured into a can and kept covered so as to cool very slowly, thus preventing the wax from cracking."

So it seems that "slow cooling" is the orthodox thing.

A large quantity of wax covered over, in a warm room, will of itself cool slowly, without any further preliminary. A small quantity cools more rapidly. Add a quantity of hot water, and that will make it cool more slowly. An excellent way is to put the dish of wax (there may or may not be water in the dish with the wax) into the oven of the cook-stove in the evening, leaving it there till the next morning. The slow cooling of the stove insures the slow cooling of the wax. But there may be a bad mess if you forget to take out the wax until the stove becomes very hot the next morning. To avoid this, put the stove-handle in the oven with the wax, and when you take out the handle in the morning you will be likely to think of the wax.

Pollen for Brood-Rearing

On page 131, R. C. Aikin expresses uncertainty as to whether feeding will induce bees to rear brood provided no pollen be present. One of the older members of the craft reports that years ago he had a colony in early spring that had no eggs or brood, while others had plenty. Deciding that it was queenless he was about to unite it with a queen-right colony when he happened to notice that no pollen was present. A frame of pollen was given, and brood-rearing was promptly started. He thinks pollen is absolutely necessary for the production of brood.

It is true that no brood can be reared without the nitrogenous elements contained in pollen; but it is also true that even the clearest honey contains some grains of floating pollen. The question is whether the amount of floating pollen contained in honey is sufficient to allow brood-rearing. The incident given seems to show that it is not. Mr. Aikin, as any other bee-keeper in his region, where there is little or no pollen to be obtained in spring, is in good position to test the matter. Simply deprive a strong colony of all pollen in spring, and then note results.

Bee-Space Above or Below Frames?

G. A. Deadman, in the Canadian Bee Journal makes out a pretty strong case in favor of having the bee-space in hives and supers at the bottom instead of the top. He argues that with the space at the bottom any perfectly flat surface may do for a bottom-board, and no matter where the hive is set down a lot of bees will not be killed, as is the case with the usual space at top. Also, it is easier to scrape bur-combs and propolis from the tops of frames if there is no space above. Perhaps not every one could readily say just why the space is so generally at the upper part.

Likely Mr. Deadman does not use flat covers. They are, however, in very general use, and their users would not readily give them up. With no bee-space above, a flat cover would kill just as many bees as a flat bottom-board with no space below. A section-super can hardly be made so that there will not be some shrinkage as it grows older. If it is made with no space above—the sides of the super being exactly flush with the tops of the sections—then as the sides of the super shrink the tops of the sections will project above the top of the super, and there will be trouble when another super is set on top.

Giant White Clover

On page 138, Chas. M. Hix asked why Mr. Burbank does not attack the problem of securing a larger kind of white clover with the short heads, so that the farmer could be persuaded to sow it for hay. Attention has been called to the fact that in Dr. Miller's "Forty Years Among the Bees," page 149, Mr. Hix may find a picture of the very thing he desires. Concerning it Dr. Miller says, page 120:

> "A new honey-plant has been mentioned a good deal in the foreign bee-journals, a giant white clover, called Colossal Ladino. I succeeded in getting some seed from Switzerland, sowed a few of them in the window in the winter, and had the plants blooming in the summer of 1902. For the purpose of comparison you will see in Fig. 48, at the right, a branch of red clover, and at the left a plant of common white, or Dutch, clover, both grown on the same ground. As you will see by looking at the picture, the new plant has leaves as large as those of red clover, and in appearance I think they are identical. The blossom, however, which you will see toward the left, looks precisely like a large white-clover blossom. The habit of growth, too, is that of the common white clover, running along the ground and taking root as it goes.
>
> "Just how much value there is in this new clover I do not know. As will be seen, it grows much larger than the common white, but only as its leaves and leaf stems are larger, for it does not grow up and throw out branches like red clover."

That was in 1902—7 years ago. As nothing has been said about the plant in late years, it does not seem to have met "a long felt want" among the farmers. White clover is not cut for hay, and is not likely to be, no matter how large its leaves may be grown, since all those leaves must start from the ground, while red and alsike, with their branches and leaves high up, produce so much more hay per acre.

The thing that Mr. Burbank could do in the interest of bee-keepers is to breed a variety of red clover with short blossom-tubes, and at the same time a little earlier than common red, so that farmers would prefer it. It requires only time and perseverance, and some ambitious young bee-keeper may be able to solve the problem as well as Mr. Burbank.

Sealed Combs for Winter and Spring

Right now is a good time to plan to have some extra combs of sealed honey. In the fall they will come handy. If there happens to be a colony that you fear may lack just a little in stores, there is no nicer way to supply that lack than by means of a comb plump full of sealed honey. Next spring it will be the same way. Especially is this true if you have 8-frame hives. Also, there is more need of it when running for extracted than when running for comb honey. Don't begrudge the bees this extra amount. In the long run you will get more honey by it.

Water for Bees in Spring

At this time of year a good many bees are lost in going to some distant place for water. It is a very easy matter to keep a good supply close at hand. Take a half-barrel, tub, pail, or any vessel you like; put water in it, and then put in enough cork chips so there is no danger of drowning, and yet not enough to prevent the bees from reaching the water easily. The only attention it will require throughout the summer will be to add water occasionally as it disappears. The cork chips you will get from any grocer who has had them as packing in kegs of grapes received in cold weather.

Miscellaneous News-Items

Samples of Bee-Diseases Wanted

The Bureau of Entomology, at Washington, D. C., desires samples of comb containing infectious bee-diseases, from every county or township in the United States where such diseases exist. Dr. G. F. White will spend most of his time on investigations, and the information which he will be able to furnish should be of great value, not only to those sending the samples, but to the State legislatures considering foul brood laws. It will also aid the Bureau of Entomology in distributing literature on symptoms and treatment of the diseases.

We hope our readers will co-operate with the Bureau in their efforts to be of assistance to bee-keepers and bee-keeping. Mail all samples, properly packed, to the Bureau of Entomology, Washington, D. C., and don't forget to put your own name and address on the package.

To Clip Queen

The British Bee Journal gives the following succinct instructions for getting a queen in position to have her wings clipped with a pair of scissors:

> "Grip hold of the queen while she is on the comb by the thorax between your finger and thumb, then slide them up off the thorax, pressing them together at the same time, which will give you a hold of the wings. Then take hold of her with the other hand by the thorax under the wings, which will now stand up in a convenient position for clipping."

Dr. Miller and His Apiary

A fairly good picture of Dr. C. C. Miller and his home apiary, located at Marengo, Ill., appears in the British Bee Journal for April 15, 1909. It was taken by Mr. Alex. Schroeder, of Trieste, Austria, when he and his wife were at Dr. Miller's some months ago. Mr. Schroeder accompanies the picture with a brief article descriptive of his visit to Dr. Miller's.

Massachusetts Bee-Meeting

At the April meeting of the Massachusetts Society of Bee-Keepers the following-named officers were elected for the ensuing year: President, E. C. Britton of Canton; vice-presidents, W. A. Small of Waltham and X. A. Reed of Belmont; secretary, Miss S. J. C. Needham, of Roxbury.

The annual field-day is to be held at the apiary of Mr. Henry W. Britton, in Stoughton, Aug. 7; or, if stormy, the next fair Saturday.

Fall Treatment of Foul Brood

At one time there was little thought of treating foul brood in the fall; now it begins to look as if the fall might be the favorite time, as being less trouble than at any other time. Merely take away all combs in the fall and replace them with combs entirely filled with sealed honey. There must, however, be some pollen in these combs, or no brood-rearing will be started in spring until a supply of pollen can be brought in from outside.

Wm. McEvoy seems quite enthusiastic in the matter, and says this in the Canadian Bee Journal:

> This fall treatment of mine is the simplest, cheapest and by far the best ever offered to the public. I have followed it since 1875, and made perfect cures in every case, and never in all my long experience did I have a single failure. I have treated hundreds of colonies in my time by shaking the bees off diseased combs and giving all-capped stores in the fall.
>
> Mr. Byer says that it is very difficult to get all capped combs. Oh, my, no! It won't be if people will only follow my instructions—and this they should do—and get the combs all nicely capped right down to the bottom of the frames—a thing that any man can do for very little cost by placing Miller feeders with sugar syrup in on brood-chambers about the last of August, when the hives are pretty full of brood and the outside combs pretty well filled with honey, the bees will rush the syrup into the remaining space in the outside combs and will cap every cell right down to the bottom of the combs, and when this is done each of the fed colonies can spare the outside combs, and in evenings in October fine cures can be made by shaking the bees off diseased combs and putting in six combs all sealed, which have been fed up for this purpose, and then put in the division-boards, and in the spring take out the division-boards and put in the full set of brood-combs.
>
> These colonies with choice stores and plenty of pollen in their combs to keep up brood-rearing will come into spring in booming condition.

◆

National Membership Over 3000

The last report from General N. E. France, of Platteville, Wis., shows that there were 3225 members in the National Bee-Keepers' Association, on April 1, 1909. That looks good. There is probably no other bee-keepers' association on this continent that has even one-tenth as many members as the National.

On the Information leaflet sent out by Mr. France April 1, he said the prospects for honey this year are fairly good; bees wintering well generally; and white clover was reported as looking good. In some places there are big prospects for honey, such as California, Colorado, and Texas. The North Central States have good clover prospects. This information he gleans from his general correspondence.

◆

Stimulative Feeding Not Approved

> During the past two trying springs it has been my privilege to visit a good many apiaries, many in which stimulative feeding in the hands of expert men had been faithfully carried on, yet I am bound to say that in every case where the bees were found to be in real good condition they had been heavy in stores, and had been well protected and left alone, without any stimulating whatever.—J. L. Byer, in Canadian Bee Journal.

However it may be with the experienced (and many of them never practise stimulative feeding in spring) there is no doubt that stimulative feeding is a pretty safe thing for beginners to let alone.

◆

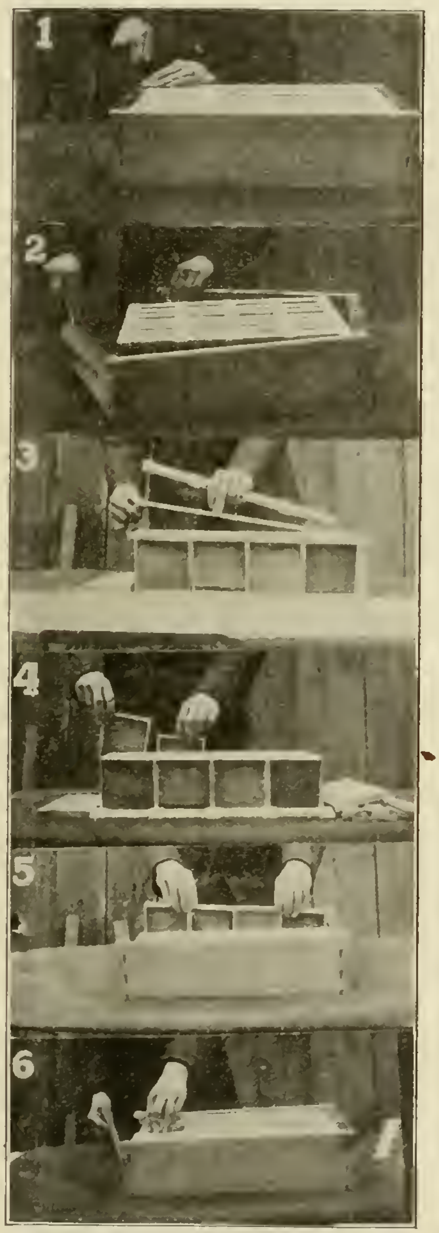
Souvenir Honey-Recipe Cards

The Colorado Honey-Producers' Association, Mr. Frank Rauchfuss, Manager, has gotten up a series of souvenir postal-cards, showing a State flower on each card, in natural colors, also a stanza of poetry, and an interesting picture, in some cases the State Capital Building. The foregoing is all on one side of the card. On the other side is a place for the address, and at the left is printed the name of the Colorado Association, and also a honey-recipe. They are beautiful, but interesting as souvenirs, as well.

◆

The New Bachmann Super

We have received the following illustrations showing some manipulations of the Bachmann Comb-Honey Super, as done by its inventor, Mr. C. H. Bachmann of Gueph, Ont., Canada:



The Bachmann Super.

No. 1.—Drawing lock-pin out of super.
No. 2.—Opening super and releasing entire body of sections at once.
No. 3.—Taking cover-slats off sections.
No. 4.—Separating sections.
No. 5.—Refilling super, putting in 4 sections at a time with one separator.
No. 6. Replacing cover-slats, and locking same in.

Hamlet—Modernized.

To bee or not to bee: that is the question.
Whether 'tis better, *in the mind,* to suffer
The stings and terrors of indocile workers
Or to lay hold with vigor and discretion,
And by design, use them? To die: to sleep
In ignorance of what real honey is?
Yea, more: to sleep with taste of "silver drips,"
(That glucose fraud) forever on the lips,
And end life's little day? To die: to sleep:
Perchance to dream of blooming fields teeming
With honied wealth and never know the taste
Of the pure quill? O, 'tis a consummation
Ne'er to be thought of while the silly bees
Work all the golden hours and never strike!
When we have shuffled off this mortal coil
What odds to us if one barb more or less
Be left in our tough hides? Shall we not feed
Our babes with God's ambrosial nectar when
Bees toil for nought and earn their board besides?
'Tis wicked waste to raise all corn and trade
The same for stuff the skillful chemist makes,
When willing wings explore the coaxing blossoms
And grunt and sweat under a precious load
Of pancake sweet'ner none can fabricate!
If they do not complain, then in the name
Of thrift and luxury let them toil on.
That late-discover'd posy-bed from which
These laden travelers return oft-soon
Conspires to feed our erst-while waning hope
And makes us rather bear the little stings
We suffer, balmed by peace 'mid rural scenes,
Than fly to those arrow'd by urban greed.

Forest City, Iowa. Eugene Secor.

◆

"Something About Alsike Clover"

This is the name of a 16-page pamphlet, about envelope size, which gives the opinion of a number of experts, collected from various sources, showing how to grow alsike clover for profit, either for hay or for seed. Incidentally, of course, the bee-keeper will get the benefit also, through the bees' working on the rich nectar-laden blossoms. The pamphlet is published by the A. I. Root Co., of Medina, Ohio, who mail it free on request to any one interested in the subject.

◆

Some Appreciated Congratulations

We have received a number of very nice letters referring to the American Bee Journal and our 25 years' connection with it, for which we wish to extend our sincerest thanks. Among them we are taking the liberty to present the following as samples:

Friend York:—I think the last number of the "Old Reliable" is the cap sheaf of them all, both as to quantity and quality. You may well be proud of it. And that picture of the editor is so lifelike it reminds me of the pleasant trip we had to San Antonio, to the National.

Long may you live, and happy may you be in your life's chosen work.

C. A. Hatch.

Richland Center, Wis., April 19.

Friend York:—The April number of the American Bee Journal is at hand, and without fear of being accused of flattery—I believe I'm known to say what I think, too well, to be charged with that—I wish to say that the editorials in the Journal are invaluable to the beginner in bee-keeping; but most especially so in the current number. The comments on "Equalizing Colonies," and "Getting Good Queen-Cells," are worth, to the inexperienced, ten times the price of subscription, for by a single blunder he might lose much more than that amount. It is attention to minute details of instruction to the beginner in almost any line of study, and especially so in bee-keeping, that counts. This fact is one of the reasons which makes "Forty Years Among the Bees" so valuable to the uninitiated. I imagine I see Dr. Miller, as a school-master—standing in his yard during a hot day, perspiration dripping from his brow, a smile on his face—giving instruction to a class of students in bee-keeping. His book should be in the hands of every person contemplating commencing the business of bee-keeping.

Allow me to congratulate you, and the community in which you live, as well, on the sensible view you take of life and its responsibilities. There is something more than mere money-getting that makes success in life.

WM. M. WHITNEY.

Evanston, Ill., April 18.

DEAR MR. YORK:—I beg to congratulate you on the 25th anniversary of your connection with the American Bee Journal.

The sentiments expressed in your April issue confirm an impression that I have had with respect to its Editor, and help to increase the belief that that Journal, which occupies a place all its own, will sooner or later find its way to the homes of many more bee-keepers.

The really great in this world are always humble, and the American Bee Journal shows its greatness through a spirit that it is difficult to define, but which is felt by those that deal with it to any extent.

May it and its Editor be blessed with increasing prosperity.

JAMES A. SMITH.

Hartford, Conn., April 20.

EDITOR YORK:—Your statement in the last Bee Journal, wherein you tell of your 25 years' work with the paper, was read, and greatly affected me, so much so that I herewith send you my sincerest congratulations and best wishes for the future.

It is indeed, a great thing to be connected with one work for 25 years, and especially so to work with a paper, always trying to make the last number better than the previous one.

I have only 3 colonies of bees, very little time to devote to them as all gardeners are always busy, and I thought I would do without the American Bee Journal, but I have changed my mind. I will remit for one year a little later.

CHAS. PURZNER.

Jefferson City, Mo., April 20.

It is very gratifying to us to feel that our efforts to publish a good, clean, independent bee-paper are recognized and appreciated. The American Bee Journal is not in any way connected with the bee-supply business, but it is entirely independent, so that whenever it expresses an opinion along bee-appliance lines it is free from even an unconscious bias. It has been so for many years. When, some years ago, its editor was interested in the sale of bee-supplies and honey, its advertising columns even were not used by us to push our bee-supply sales. We had a catalog for that purpose. In no sense can the American Bee Journal be called a "house organ," or manufacturers' catalog.

We believe that nearly all bee-keepers, whether they are our subscibers or not, appreciate a bee-paper that is independent, and that believes in fair play and a square deal all around. It is our earnest endeavor to edit and conduct the American Bee Journal in such a manner that it will commend itself even to those who may see only a sample copy of it.

◆

The Golden Apiary in Kansas

I am herewith sending a number of pictures which were taken mostly by myself. No. 1 [see first page] is a general view of The Golden Apiary, as it appeared in the fall of 1908, at Lyons, Kans., and now located at Dodge City, Kans., Mr. P. R. Hobble being president, and the writer, who appears in the picture, general manager. All hives are of the Langstroth or dovetailed pattern, 10-frame size with Colorado covers and ⅞-inch reversible bottom-boards. The strain of bees that are kept in this apiary are Golden Italians, and all bees in the neighborhood are of the same strain.

No. 2 —MR. FRANK READY FOR BEE-WORK

The hives are all in straight rows and in pairs, each pair being one foot apart. The pairs in each row are 6 feet apart, and the rows 12 feet apart.

No. 2 is the writer as he appears in his bee-dress, with a suit of white ducking, Alexander bee-veil, and Jumbo 4-inch smoker.

No. 3 is the writer as he appears with his "automobile" ready to start for the out-apiary.

J. C. FRANK.

Dodge City, Kans., March 29.

◆

A Cheap Uncapping Box

In answer to question of J. R. Bogart, on page 373 (1908), I send the following description of a very convenient and cheap capping-box, which ought to satisfy his purpose:

No. 3.—MR. FRANK AND HIS "AUTO."

Have a tinsmith make a galvanized-iron tank of the inside dimensions of an ordinary 10-frame extracting super, with a shoulder ⅞-inch wide, but ½-inch high. This is readily seen at A and B in the diagram. Also have a small netting of about ¼-inch mesh on bottom of super. Then place the super within the projections of the tank and drop the cappings upon the mesh. The honey runs readily in hot weather, leaving the cappings practically free, when they can be removed to the wax-tub or press.

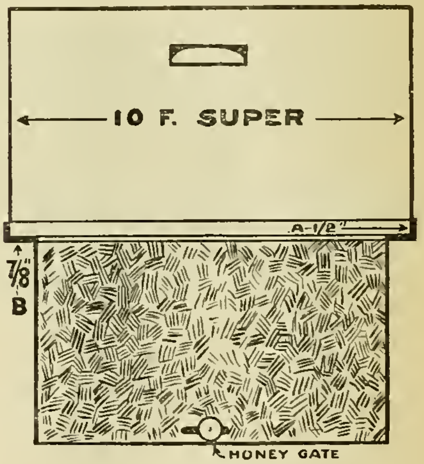
The tank described costs $1.50, and was used by a bee-man who extracted from 2 to 3 tons each season.

Redlands, Calif. CHAS. TROUT.

◆

Apiary of C. H. Voigt

The photograph I send you is part of my apiary, which is located in the northeastern part of the State of Wisconsin, 5 miles west of Lake Michigan, and one mile north of the southern boundary line, in Kewaunee county, and was started with one colony, which I bought in the fall of 1894, from a neighbor then selling out and moving away. I knew nothing about bees at that time, but a friend, Mr. Fred Trapp, gave me a volume of the American Bee Journal; I think it was of the year 1892. Then I went to studying, although I was 50 years old in February. So you see I was quite a young scholar, but I was determined to make a success of bee-keeping.



CHEAP UNCAPPING-BOX.

In that volume of the American Bee Journal I found that there was a book called the " A B C of Bee-Culture." In 1895 I sent for the book and Gleanings. After reading the advertisements there I found the address of the American Bee Journal and sent for it in 1895, and have been a reader of it ever since that time. It has been a great help to me, especially the "Question-Box" by Dr. C. C. Miller.

So I went on slowly and increased my bees as I gained knowledge in bee-keeping. I got more books so that now I have a little library on bees, and so far I consider my bee-keeping a success, although I had my ups and downs as well as others.

My apiary had 90 colonies at the time the picture was taken—the latter part of August, 1908. I call that all right for an old boy of 64 years now. The apiary is in an orchard on a northern slope. The hives are mostly the 10-frame Langstroth size, and homemade, with the exception of 10 which are factory-made, and facing to the south. The picture was taken from the southwest.

The people are: Myself standing by the section-cases; the lady standing farthest at my left is my wife; the one holding the frame of honey is my granddaughter; the boy in front is my grandson—and his dog. The lady at my right is my daughter, Mrs. Mueller, and the gentleman at the right is my son-in-law, Mr. Mueller, and all enjoy the bees and especially the honey, but don't care for the stings, and try to avoid them as much as possible.

I run my bees mostly for extracted honey, but a few of them are run for comb, and it is sold in the home market.

Tisch Mills, Wis. C. H. Voigt.

To Connecticut Bee-Keepers

In this number will be found the report of the last Connecticut convention of bee-keepers, and also an article by its able president, Mr. Allen Latham, on "Colony-Diagnosis in Spring." If there are still any bee-keepers in Connecticut that are not regular readers of the American Bee Journal, we wish to give them a cordial invitation to subscribe at once. Surely, they will find this copy alone worth the subscription price of 75 cents a year.

Of course, all other bee-keepers anywhere and everywhere not now on our mailing list, are also requested to become subscribers, and thus from month to month get the benefit of the helpful things found in these columns.

To South Dakota Bee-Keepers

As has already been announced, South Dakota bee-keepers have secured their foul-brood law, and L. A. Syverud, of Canton, S. D., has been appointed inspector for the eastern half of that State. All bee-keepers residing in that part of the State, should notify Mr. Syverud, if they discover any suspicious cases in their bee-yards.

The Iowa Foul Brood Law

We have received the following from Edward G. Brown, of Sergeant Bluff, Iowa:

> Editor York:—The Iowa legislature passed the foul brood law which was presented to it this spring, and we hope to have an inspector appointed soon.
>
> The Iowa bee-keepers are greatly indebted to N. E. France, of the National Bee-Keepers' Association, and Dr. E. F. Phillips, of the Bureau of Entomology at Washington, D. C., for their help in getting the law passed. And I wish to thank the editors of the American Bee Journal and Gleanings for their help in calling out the support of the Iowa bee-keepers.
>
> Credit is also due the large numbers of men who secured signatures to the petitions we sent them, and then forwarded them to their representatives.
>
> Represenatives B. F. Stoddard, of Jesup, Iowa, and W. L. Harding, of Sioux City, had charge of the bill.
>
> Edward G. Brown.

We have received a copy of the Iowa foul brood law, but just now our columns are too crowded to publish it. Suffice it to say, that it should accomplish what is desired if it is properly applied. Bee-keepers of Iowa should co-operate in every way possible to clean up the bee-diseases of their State.

Mr. Dickson and His Apiary

I am sending you a picture of myself and some of the honey I produced. I have been keeping bees two years. I got my first swarm in June, 1907, and have been reading the American Bee Journal and Gleanings to keep up with the more experienced bee-keepers. My crop for 1908 was over 500 pounds, mostly comb, from 8 colonies. I would have had more, but I was not at home to change the supers, and lots of honey went into bur and brace comb, because the bees did not have room to store it. But I was pleased with what I got. I think I did fine for a beginner. I like to handle bees very much. I do not mind the stings, and think I can make a success of the buisness, as I like very much to try new things with the bees. I have 9 colonies now, all wintered on the summer stands. Upon looking into the hives Feb. 28, I found all with plenty of stores and brood in 3-frames in some hives and in 4 frames in others. I use 8-frame hives, mostly, as they are not so heavy to handle, and I can get good results from them.

L. S. Dickson and Honey.

Princeton, Ky. L. S. Dickson.

Bee-Stings a Cure for Rheumatism

The daily newspapers have been publishing considerable lately about the bee-sting cure for rheumatism. It seems that Dr. Arthur W. Swann, a surgeon at the Roosevelt Hospital in New York City, has been experimenting on rheumatic patients. It seems there are quite a number in that Hospital suffering from rheumatism. This led the Doctor to remember that for many years he had heard that bee-stings were a cure for the malady.

Dr. Swann reported in the New York Times of March 23, that he had so far tried the bee-sting treament on 4 obstinate cases, and it had resulted in at least a temporary improvement in each case. He based his belief in its efficacy on the fact that the sting causes a counter-irritant, or that the peculiar poison of the bee-sting acts as an antidote to the uric acid, which, it is said, causes rheumatism. Just how Dr. Swann applied the bee-sting remedy is described in the following paragraphs:

> "I picked out 4 of the worst sufferers from rheumatism—those whose joints and limbs were stiffened by the disease. After washing the afflicted parts with alcohol, so as to insure perfect cleanliness, I put 2 or 3 bees into a glass and then inverted the glass over the limb, which I had covered with a piece of thin gauze.
>
> "After a while the bees got busy, and when the patient had been stung once or twice, they were removed. The patient is watched very closely, and the treatment is renewed daily, the number of bees being increased until I have had as many as 10 bees under the glass at a time.
>
> "As I said, the results have been most satisfactory, but it is too early yet to say anything about the ultimate result of my experiments. I hope to try it out on some 60 or 70 patients before I come to any definite conclusion, but so far as it has gone, I am well satisfied with the experiment."

Of course, the bee-sting cure for rheumatism is not at all a new one to bee-keepers. For many years practically all the bee-papers have recorded cures of rheumatism as a result of the application of bee-stings. We remember very distinctly being told by the late Dr. A. B. Mason, of Toledo, Ohio, who for a number of years was secretary of the National Bee-Keepers' Association, as well as one of its ex-presidents, that he had suffered from rheumatism in his ankles. He decided to try the bee-sting cure.. He put on slippers and went to the entrance of one of his bee-hives, and then jarred the hive so that the bees came out and stung him plentifully on the ankle, through his black socks. He told us that the cure was complete and permanent. Surely it is a very simple remedy, and most easily applied by bee-keepers, although it is doubtful if very many of those who keep bees are affected with rheumatism. Perhaps they get just enough stings during the working season with the bees to prevent rheumatism getting hold of them.

The newspapers have also recently reported the application of bee-stings to the anatomy of a man who was completely ossified. It seems that after two or three applications of the bee-sting remedy, he was able to "get a move on him," at least to some extent. It was thought that by repeated applications of the remedy he might become quite natural again.

It has also been reported that Paderewski, the famous Polish pianist, has been suffering from rheumatism in his hands, so that he was not able to perform as usual. The bee-sting cure was recommended to him, but it seems he declined to submit to its application. If any one prefers to suffer much and for a long time from rheumatism, instead of suffering a few minutes from the application of the "business end" of a few healthy bees, of course, it is his privilege. Personally, we would much rather have the bee-stings. No doubt, most bee-keepers would "enjoy" the bee-stings much more than the rheumatism.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

Spring Feeding of Bees.

As has already been mentioned, nearly all reports received as to how the bees have wintered are favorable. However, a number report that the bees are short of stores, and that it is necessary for some feeding to be done. In a cold April like the present, a matter of feeding bees is not one of the most pleasant things to contemplate, and as I have "been there" in past years, those who have to feed now have my sympathy.

Last fall my bees went into winter quarters very heavy, and one source of comfort during this backward weather, has been the knowledge that the bees are still heavy with stores and in no danger of starvation for some time, even if nothing should come in from the fields. Of the 35 colonies that were wintered in the cellar, two were marked light when they were put out, but they have sufficient till May 1st, anyway. Of the bees outside, not a single hive has been opened as yet, save the queenless colony mentioned, as well as the small nucleus from which a queen was taken. With us there has really not been a single day fit to expose the brood-nest, as yet this spring. With abundance of stores, there is really nothing to be gained, and possibly a lot to be *lost* by these early manipulations, anyway.

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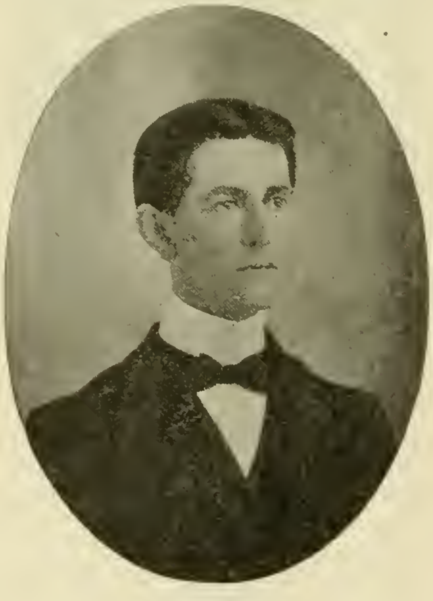
Morley Pettit—Ontario Provincial Apiarist.

As will be noticed in the April American Bee Journal, the official notice of Mr. Pettit's appointment was made after I had sent away copy for the April issue. I do not think that I can add anything more to what the Editor has said, save to endorse his statements heartily. No question but that Mr. Pettit is thoroughly qualified for the position, and, in common with many others, the writer of these notes says most heartily, "Here's wishing you all success in your new sphere of labor, Morley."

I might, however, add the following from Gleanings in Bee Culture for April 15, written by R. F. Holtermann:

> Mr. Morley Pettit, of Nixon, Ontario, well known to the bee-keeping fraternity, will be Provincial Apiarist, having charge of the experimental apiary at Jordan Harbor; he will be the lecturer at the Ontario Agricultural College, Guelph, and inspector of apiaries in 5 counties.
>
> Mr. Pettit is the youngest son of S. T. Pettit, formerly of Belmont, now living retired at Aylmer West, Ont. Mr. S. T. Pettit's apicultural activities were mostly carried on from Belmont, Ont., and he will be best remembered in connection with that address. Morley Pettit will probably hold the record as to a season's profits from an apiary, having cleared some $1,200 from 69 colonies in one year. He has, therefore, had good apicultural training in his boyhood. He has a first-class certificate as a schoolteacher, and an extensive experience as a bee-keeper himself, all of which, focused upon the work in which he is now to engage, should bring to the apicultural world something worth knowing. It is to be hoped (and I believe it will be the case) that the Ontario government will not be slack or slow in supplying needed equipment.
>
> The Hon. Minister of Agriculture, Mr. Duff, represents Simcoe County in the Legislature. This is a county of great apicultural activity, having in it men of progressive ideas. In our gratitude to Mr. Duff, and in hopefully looking forward to the future, it will do no one an injustice to state that the decision to establish the Jordan Apicultural Station was one of he last acts of the Hon. Nelson Monteith, and bee-keepers will not be likely to forget that in this act, in the providing of lecturers at county meetings, and in an increase from $600 to $2500 for the stamping out of foul brood, Mr. Monteith has broken away from a rut into which Ontario apiculture had fallen. The grant for the year is $2500.



MORLEY PETTIT.

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Ontario Inspector of Apiaries.

The Ontario Department of Agriculture has this year appointed 14 Inspectors of Apiaries, so there should be no complaint on the part of any bee-keeper this season in not being able to secure the services of an inspector, should they be required. A full list of the inspectors, with their post-office addresses, and list of Counties allotted to each, are here appended:

1. J. S. Schrank, Port Elgin, Ont.—counties of Bruce and Huron.
2. D. Chalmers, Pool, Ont.—Perth and Waterloo.
3. W. A. Chrysler, Chatham, Ont.—Lambton, Kent, Essex.
4. John Newton, Thamesford, Ont.—Middlesex, Elgin.
5. James Armstrong, Cheapside—North and South Norfolk, North and South Oxford.
6. Jacob Alpaugh, Eden, Ont.—Wellington, Grey.
7. H. G. Sibbald, Claude, Ont.—Simcoe, Dufferin, Peel.
8. Morley Pettit, Nixon, Ont.—Brant, Wentworth, Halton, Haldemand, Lincoln, Welland.
9. J. L. Byer, Mt. Joy, Ont.—Ontario, York, Victoria, Durham.
10. Warrington Scott, Wooler, Ont.—Peterboro, Northumberland, Hastings, Prince Edward.
11. A. A. Ferrier, Renfrew, Ont.—Renfrew, Lanark, Carleton.
12. D. L. McNaughton, St. Raphael, West, Ont.—Russel, Prescott, Glengarry.
13. M. B. Holmes, Athens, Ont.—Lenox, Addington, Frontenac, Leeds.
14. Homer Burke, Highland Creek, Ont.—Grenville, Dundas, Cornwall.

◆

Peculiar Winter for Bees.

A peculiar winter has just come to a close. Warmer than the average as in most other sections, yet in our locality there was not a single day that the bees could take a cleansing flight, between Nov. 25th and April 1st. Many a time the bees would be thoroughly aroused, and indications would be fine for a flight, but in every case, fog or clouds would come along and prevent the bees from getting out. As the bees were pretty much on buckwheat stores, I was a bit uneasy as to the outcome, but when the flight finally came on April 1st, the bees responded in good shape, and I believe we can report successful wintering for this year.

Reports received from a number of apiarists in different parts of the Province are uniformly good, with the one single exception of the case mentioned in a former issue, where a bee-keeper reported disaster from honey-dew in the hives. March and April have been very cool and windy, and with us pollen came in only one day, and then in very limited quantities—this on April 18th. The weather has been so cool that very few bees have been enticed from the hives, and this has been better for them, no doubt, than if there had been more warm, sunny days with cold winds; as this latter condition is worse for spring dwindling than any other kind of weather combination.

◆

Dairying and White Clover.

The word, "locality" is no doubt often abused and made to cover up something when a legitimate argument has failed in its purpose, yet there is no question but that the same word has a lot to do with the differences in management and other things pertaining to apiculture. For instance, only lately Dr. Miller mentioned the fact of the people in his section of country going heavier into dairying each year, and he stated that this meant an increased acreage of white clover each year. Here the people are going into more dairying each year, too, but in our case it means *less* white clover each year instead of more. Why this difference?

Well, as I understand the matter, in Dr. Miller's case the people depend more upon pasturage for their herds, while here the soiling system in more in vogue. That is, instead of having a big acreage of pasture land, the farmers find that it pays them best to crop this land and raise corn, etc., for feed purposes, and feed pretty much in the stall all the year around. They claim that it is much more profitable, and while I am not interested in that phase of the question, yet the fact remains that our pasturage acreage is decreasing instead of increasing each year. However, it does not make much difference to us, as in my immediate vicinity white clover cuts but a small figure in the honey crop, all of the surplus coming from the alsike. Cut out the alsike clover in Ontario, and two-thirds of the bee-keepers might as well go out of business, as we have no other surplus to be depended upon with any certainty.

Detecting Queenlessness from Outside Appearances.

The question is often asked as to whether it is possible to detect queenless colonies without opening the hives. For my part, I know of no plan that will be sure at all times. However, in the spring of the year it is a pretty easy matter to pick out such colonies, especially if the day is cool, yet warm enough to bring out bees in search of water for brood-rearing. Yesterday (April 20th), I was at the Cashel apiary doing some work in the honey-house, and although the day was cool, with a damp east wind blowing, yet many bees were carrying water from a trough in the yard sheltered from the wind. Glancing down the rows of hives, I noticed that one colony was not moving at all. Turning back the quilt at the corner, it was seen that there were lots of bees present, and I said to my brother-in-law who was with me, that there was no doubt but the colony was queenless. So sure was I about the matter that we got the smoker and examined the colony, although the day was so cool that I would not have thought of opening a hive where there was any brood. An examination revealed just what we expected, and a queen was taken from a weak nucleus and given to it at once.

Of course, the reason that a queenless colony is not moving any on a cool day, is because they have no brood that requires water, and any colonies that fly heavily on such days will always be found to be feeding a lot of brood.

Returning to the matter of that queenless colony, I would say that the queen was one purchased in 1907, and last year it was one of my best. As will be seen, although they went into winter quarters very strong, yet the queen played out some time during the winter or early spring.

Right here I want to remark that my bees do not seem to be as sensible as Dr. Miller's, for he says that, as a rule, his queens are superseded before the colony becomes weak, and in my case, left to themselves, about 75 percent of the colonies will disappoint me by *"going bad"* just in a critical time. One of the favorite seasons for my colonies to "trot out" a failing queen, is just in fruit-bloom, and of all the provoking things to run against, this finding of failing queens just before the main honey-flow is one of the worst. Why it is I know not, yet the fact remains, that some of my colonies with old queens, that have often wintered extremely strong, will turn up with a superseding queen during the early part of May.

Our
Bee-Keeping
Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Germany's Honey-Cake Town.

There are several places in Germany which are almost chiefly famous for producing some variety of cakes which are "christened" after them. Leignitz itself is one, and another is Waldbockelheim. It stands near Kreuznach and has a population of between 600 and 700, a large percentage of which are engaged in making what are known as "Waldbockelheim, or honey-cakes," a very tasty form of bakery ware which, in spite of the smallness and out-of-the-way character of the place in which it is manufactured, enjoys a sale among Teutonics in all parts of the globe.—Bakers' Weekly.

Raining Flowers.

It is not raining rain to me,
It's raining daffodils,
In every dimpled drop I see
Wild flowers on the hills.

The clouds of gray engulf the day
And overwhelm the town;
It is not raining rain to me,
It's raining roses down.

It is not raining rain to me,
But fields of clover bloom,
Where any buccaneering bee
Can find a bed and room.

A health unto the happy—
A fig for him who frets!
It is not raining rain to me
It's raining violets! —Selected.

Sure Way to Prevent Absconding Swarms.

Make the frame or skeleton of a box the exact length and depth of your hive, and half as wide again. Make the 4 end posts say 2 inches longer. Leave the length at the bottom for legs so that when you set it on the ground the bees can't possibly get crushed. Now line this skeleton of a box with something soft. I use bags that rice is shipped from China in. Rip them open and sew them together, although one rice bag will nearly do it. A good, stout sail-cloth or tent-canvas will answer just as well. Make the skeleton as light as possible. I used one-inch by one-inch. Now when it is lined on the inside nice and soft, nail a cleat on each end to support the frames. Now take a good, strong leather strap. I used a piece of an old tug or trace. Nail this on the outside for a handle at each end, allowing it long enough to lie well over the edge of the basket, so as to permit of placing the frames in the center of the basket.

Now we will suppose that you have a swarm hanging on a very low tree. Take from one of your strong colonies a frame of brood in all stages, and with just as little honey above it as possible. Place this frame in the center of the basket and drive a nail half through each end to keep it steady. Now place a frame with comb foundation in it, one on each side of the frame with brood, driving a thin wire nail half way through to retain them in place. I forgot to say that I run a large hook through the strap. Now simply hang the basket on a good stout branch just so that the end of the swarm will touch the frame with the brood and honey, and presto, change! the little pets will run delightedly in and cluster cosily down and immediately set to work.

Now carry the basket to the hive and gently draw the nails and place the 3 frames directly in the center of the hive, gently shaking the balance over the top. Put on the bee-quilt and top. The bees will keep right on working just as if nothing had happened.

If the bush is so thin you can't hang the basket, a quick, gentle jerk will precipitate them into the basket, and a clean cloth thrown quickly over will prevent their rising in the air before they have discovered the young brood. Then a corner turned back will allow the remaining bees to enter.

Now we will suppose the tree is very high and the bees hang in a tantalizing cluster 16 and 18 feet above your head. Get from the lumber-yard a good, stout 2x2, 18 or 20 feet high; or, if you are not near a lumber-yard, cut down a good, stout stripling of a tree. Buy a small ship's pulley. Firmly nail the ship's pulley to the extreme top of the pole. Now run a stout rope through the pulley and attach one end to the basket, having the rope long enough for the other end to lie on the ground. Now place as before the frame of brood and honey, in the center with the 2 frames with brood-foundation each side, nailing them securely. Place the pole with the basket attached by one end of the rope just as close to the swarm as the branches and leaves will permit, and heave ahoy—up she goes. If possible touch the end of the swarm with the frames, and presto, change! with a delighted zoo-zoo, the bees will all run in. Of course you have a peg on the side of the pole to lash the rope around and hold the basket in place.

As soon as the last bee has left the branch, unfurl the rope and gently lower the basket to the ground, convey it to the hive, and gently place it in the center.

I have hived 15 swarms in one day from locust and apple trees, 16 and 18 feet high, and never lost a swarm, and did not feel tired or worn out, because my machine did the work.

I have written this in bed. I am convalescing from a very severe sickness, and my one worry was the fear that I should "pass in my checks" before I had given this method of hiving swarms humanely and kindly. The longer I handle bees the more convinced I am that there are less stings and more accomplished by gentleness and consideration for their comfort.

(Mrs.) FRANCES S. A. SNYDER.
Sausalito, Cal.

It is pretty safe to assume that all the sisters will unite in wishing speedy recovery to Mrs. Snyder, and that for many years the bees may have the benefit of her humane and considerate spirit.

An Expectant Sister.

My husband, S. E. Scofield, died Nov. 5, 1907, after an illness of about 5 weeks, of dropsy, leaving me alone with two little girls, aged respectively 12 and 9 years. He was very devoted to his bees, and was always happiest when working with them. He had kept them only 9 years, and had increased from 2 colonies which he found in trees and transferred to modern hives, to 42 at the time he died. The year 1907 was a very poor one with us. We had to feed 650 pounds of sugar to fit the bees for wintering.

Last season I ran the apiary alone for the first time, although I had always worked side by side with my husband in the bee-yard. I was fortunate enough to get a good crop, and sold it without any trouble. Mr. Scofield used to peddle it out a great deal, but I had to get a man to sell on commission, which took off a large percent of the profit.

This season I expect to start with about 30 colonies—the same number that I started the season with last year—and increase to 40, and work them for comb honey exclusively. Last year I got about 1,500 pounds of comb honey, which brought me about 15 cents a pound net. I hope to do *better* this year, although I am told that this year will be another poor one. There are so many of the "wet blanket" sort of folks, who seem to think that if God is good to us this year He will visit misfortunes upon us next year to make up for it. Anyway, I'm going to *expect* a good yield, and do *my* best to get it.

I can't get along along without the "old reliable" American Bee Journal.

MRS. CARRIE SCOFIELD.

Enosburg Falls, Vt., March 9.

Glad you are one of the expecting kind. Expectors have a better time in advance. They have at least the pleasure of anticipation. A big crop last year doesn't argue a bit against a good crop this year. There may be two years of failure in succession, and just as much there may be 2 years of success in succession.

Sweetly Reasoning Together.

If I had honey and you had none,
Don't you think it would be lots of fun,
If I should offer some honey to you?
For then, you see, there'd be honey for two!

Now you have money and I have none;
There's a cake of honey—a splendid one.
So don't you think 'twould be jolly for you
To buy that honey and cut it in two?

MINNIE WERNER (Aged 9).

Edwardsville, Ill.

Honey-Egg-and-Lemon for Loss of Voice.

When the voice is lost temporarily from much speaking or a cold, a remedy which is simple and pleasant to take is made by heating up the white of an egg to which should be added the juice of one lemon, and enough sugar to make it taste good. Take a teaspoonful from time to time. It will effect a speedy cure.—CECIL ABEL TODD, in the Practical Farmer.

The foregoing would undoubtedly be improved if honey were substituted for sugar. Our forbears were in the habit of using honey much in all preparations for coughs, sore throats, etc., and we might well follow their example.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

The Future of Texas Apiculture.

A dry year, or a short honey crop, does not set Texas back as the leading State, apiculturally, of all the States in the Union. With its vast areas, its varying altitudes, and the great variety of vegetation, it is possible to procure honey in some parts of the State, which, as a total, means a very large amount after all. In this respect Texas has many advantages. On account of the varying conditions in climate and altitude, and the great distribution of plant life, which play a great part in the differences in the sources of honey, it is possible to depend upon one or more of these, and if an early crop is not obtained in spring, it may come in summer or fall; if not in one locality, then in another. The bee-keeper who has more than one apiary, therefore, and these widely scattered, has great advantages over the one-apiary bee-keeper, or one who has all his apiaries in the same kind of locations.

The specialist is aware of this, and the number of such is on the increase. To be successful with such systems it becomes necessary to study thoroughly the details connected with the management of widely scattered interests to the greatest advantage. Short cuts and all kinds of labor-saving methods must be employed to cut down time and expenses, yet accomplish the most possible toward getting all there is in it out of the business. This makes possible the successful running of large numbers of colonies with profitable returns year after year. And just such kind of bee-keeping is the trend of the times here in Texas.

It is not necessary, however, that this be the only kind of bee-keeping, for the thorough bee-keeper with only one apiary has his place to fill. It is well to note that also these are employing more of the methods of the intensive bee-keeping than heretofore, and although there are a great number who are less diligent with their apiaries, depending more on "chance," the box-hive fellow has become very rare indeed, even those with only a few colonies.

With this "improved bee-keeping" it is readily seen that the industry of the present has been greatly benefited in the great Lone Star State, and for the future will only be better still.

Even should the seasons be less favorable, the better bee-keeping would still make possible the harvesting of good crops of honey. This is plain, and it behooves every bee-keeper, therefore, to interest himself in more intensive bee-keeping. *Intensive extensive bee-keeping* is the kind that pays best, but the intensive small bee-keeper will also help to make the future of Texas apiculture better.

Some interesting articles could be written upon the topic of both intensive and extensive bee-keeping. Such, telling how to *do things* successfully, how to employ short cuts and improved methods and appliances, would be of great interest to all of us who are working for a better apiculture, not only in Texas but in every State and country where bees are kept.

The North Texas Convention.

The North Texas Bee-Keepers' Association met at Blossom, in annual session at 11:30 o'clock, April 8, 1909 The meeting was called to order by J. M. Hagood, president. A committee was appointed by the chairman to arrange the program, and the meeting adjourned until 1:30 p. m.

At the afternoon session the first subject taken up was "Foul Brood and Management," by F. J. R. Davenport, who made a very interesting explanation of how he had succeeded in eradicating the serious germ disease from his hives, and that he regarded foul brood as one of the most serious menaces to the apiarian industry of this State. Pres. Hagood and several other members also gave interesting talks on this subject.

The subject of "Spring Management of Bees" was next taken up by E. W. Cathron, after which the meeting adjourned until 8 a. m. the next morning.

While the attendance was small, only about 20 members being present, they were very enthusiastic in regard to the building up of this industry.

SECOND DAY'S SESSION.

The following subjects were discussed:

"Increase by Natural Swarming vs. Dividing," by J. M. Hagood.

"Building Bees Up for the Honey-Flow," by F. G. Davenport.

"Management for Comb Honey," by E. W. Cathron.

"Marketing of Honey," by F. G. Davenport.

"Best Suited Hives for All Purposes," by W. H. White.

The following officers were elected: President, J. M. Hagood, of Enloe; vice-president, F. J. R. Davenport, of Waxahachie; secretary, W. H. White, of Blossom.

The meeting then adjourned to meet at Forreston, Ellis County, in July, the date to be fixed by the secretary of the Association, 2 days before the meeting of the Farmers' Congress at College Station, giving members at a distance the opportunity to attend both meetings at less expense.

Louisiana for Bee-Keeping.

For the benefit of those who may be interested in bee-keeping in Louisiana, the following letter appears herewith:

"This is a swamp country. We have an abundance of willows along the river and on the lakes. We have in the woods, cottonwood, hackberry, several kinds of oaks, gum, rattan, and grapevines. We have in the low places a scrubby tree or bush that bears white flowers. We call it white-wood. In the fields near here are planted several thousand acres of cotton, which grows very rank; also several hundred acres of corn and peas in the wast places in the field. We have an abundance of smartweed and sensitive-plant, which blooms profusely in July, August, and September; we also have blackberries and dewberries.

Do you think this would be a good locality for keeping bees? From what, and in what season, would I expect them to store honey? What hive would you advise me to adopt? (I now have the 8-frame dovetailed hives.) What method do you use to prevent swarming? Do you know of any book or bulletin giving a list and rank of honey-plants of Texas, or the South? I think this would be of interest to a good many of us who wish to begin bee-keeping. T. CLAYTON.

Lee Bayou, La.

Since we are running a string of out-apiaries in the Brazos River Valley, we feel that we are already well acquainted with your location, from your letter. The valleys of the Brazos river, where our bees are located, are very fertile, and rich of soil, low and subject to over-flows, and swamplike in many of the wooded parts. Practically all the same plants you have mentioned grow here, but the main surplus honey is gathered from the thousands of acres in cotton, which here also grows very rank.

The willows and cottonwoods are excellent brood-stimulators early in the season, followed by the others in about the same rotation as mentioned in your letter. The cotton honey, which is our dependence for our crop, is of fine quality, light in color, and the comb honey is fancy white in appearance, and sells well. Last year we obtained at least 30,000 pounds of pure cotton honey, and got a very good price for it. The yield comes after July 1, and lasts until frost.

The 10-frame Langstroth hive would be preferable, as the 8-frame size is much too small for best results in such a locality. Swarming would be greater and more difficult to prevent; besides, more honey can be obtained with the larger hive, as stronger colonies can be maintained.

It is a difficult matter to advise another what hive he should use. I have much better results with a divisible brood-chamber hive; and with these chambers and supers all alike. Many manipulations can be made with it that are not possible with a solid deep brood-nest.

While I can prevent swarming quite easily with the divisible hive, it is very difficult to do so with the Langstroth size. With the former, the two halves of the brood-nest are interchanged so that the bees are provided with more room long before the swarming season, and they are kept busy and uncrowded. Later another shallow story or super with empty combs is placed between the two halves of the brood-chamber, giving much room for the queen, and the bees. This knocks swarming if done at the right time. Such a stunt can not be made with the deeper hives, and takes only a few minutes for each colony.

With the deep hives I can prevent swarming only by making all 2-story, adding frames filled with foundation and interchanging them with the brood-combs above and below. This is only satisfactory in extracted-honey production, however. The "shook" swarming systems of some bee-keepers would have to be adopted for comb honey, unless increase is desired, in which case all colonies that would swarm can be drawn upon for brood-combs, etc., with which to make the increase.

I prefer the shallow-frame supers for both comb and extracted honey, however, hence it is quite bothersome with me to have the deep-frame hives as brood-chambers.

Address the State Entomologist, College Station, Texas, for a free copy of a bulletin on "Texas Honey-Plants." This was published in January of this year.

HILTON
Convention Proceedings

The Connecticut Convention

The 18th annual meeting of the Connecticut Bee-Keepers' Association was held in Hartford, April 9, 1909. The morning was stormy but a surprisingly good percentage of members was present. The afternoon was pleasant and the large attendance was very gratifying. President Allen Latham presided.

The Convention opened with prayer by Rev. D. D. Marsh. The Secretary's report showed that about 5 percent of the bee-keepers in the State are members of the Association. The Treasurer's report showed that the society is in a healthy condition.

Officers were elected for the ensuing year, as follows: Allen Latham, Norwichtown, President; Rev. D. D. Marsh, West Hartford, Vice-President; James A. Smith, Hartford, Secretary and Treasurer. Executive Committee: H. W. Coley, Stephen J Griffen, and Geo. W. Smith.

Mr. Griffen, chairman of the commitee on Foul Brood Legislation, reported that a bill had been introduced to the General Assembly, and that a hearing had been granted. The bill calls for an appropriation of $1000 per annum, and provides that a duly qualified inspector shall be appointed by the Board of Control of the Agricultural Experiment Station, to be a deputy of the State Etomologist.

MR. CRANE ON SEVERAL TOPICS.

J. E. Crane, of Middlebury, Vermont, spoke on three subjects in the morning, to-wit: "Locating an Apiary," "Best Bees," and "Shaking Bees." Although well known as a writer, Mr. Crane, personally, was a stranger to nearly every one present. His ease, ability, and sincerity as a speaker made him a favorite at once. He expressed an aversion to the placing of stones to keep hive-covers on, which always indicates a location that is too breezy, the wind being the worst robber that can visit an apiary. He believes that heavily freighted bees are blown into the grass and perish with their loads of pollen, being unable to rise. The apiary therefore becomes severely weakened through the heavy loss of bees. You can judge a good location by snow; if it lies evenly over the ground, that is a good place. Where the drifts gather is a bad stop. The apiary should be sheltered from the heavy winds, but he did not favor high board fences as wind-breaks, believing that many bees in flight collide with them.

He referred to experiments in connection with cows to bring about good butter-yields, the inference being that a similar principle holds good with bees, "the best ones being those that we give the best care." He has obtained the best results from out-yards where Italian queens mix with black drones. There is as much difference in bees as in live stock, but it is possible to secure, through painstaking care in the selection of breeders, equally good results with the bees. When a queen is secured whose eggs produce extra fine workers, a particular effort should be made to perpetuate that strain, and while it means much careful attention and thought, the amount of surplus honey will more than compensate for the extra labor and trouble. It is even possible to rear bees that have a propensity for extensive ranging, and also those with such vitality that life is prolonged in the working season.

Mr. Crane did not speak with any enthusiasm in regard to the practice of reversing combs, and did not place any great value on shaking bees. Bees are naturally ambitious, but he had resorted to shaking in a few instances when colonies had seemed without any ambition—those cases being rare,—with the result that new life had been infused into the bees. While shaking for the control of swarming may frequently be effective, it does not always prevent it.

LESSONS FROM THE BEES.

Rev. Elmer A. Dent, of Hartford, closed the morning session with a talk on "Some Lessons From the Bees," which was listened to with great interest and enjoyment. He referred to the importance of bees in olden days, the ancients even claiming that one's life was influenced by the bite of the bees on the brain. A hexagonal bite had its particular meaning; a circular bite produced an eloquent man; a conical bite made one a politician. Some valuable suggestions were drawn from the complexity and division of labor in a hive, all working in one harmonious whole. Mr. Dent said that life is becoming more and more complex, and that we are very dependent on one another, and if each one does not do his part, ill results. We have liberty to do what we please, perhaps, but with that liberty we are restricted from doing what is injurious to others. The motive which actuates the older bees to go and start a new home for the young was taken as an illustration of the recognized importance of caring for the welfare of the child—that dominant question which concerns all of us and future generations.

A TALK ON QUEENS.

After luncheon, A. W. Yates, a queen specialist, gave an interesting and instructive talk. He said that the bees should be kept warm through the early breeding season. A strong, prolific queen and plenty of stores, in a warm hive, indicate a successful colony. He is opposed to feeding in the spring unless it is absolutely necessary. Hives should all be examined the first warm day, and a careful record made as to the condition of each, so that a plan for managing each colony may be decided and acted upon. He said that most bee-keepers are behind in queen-rearing, and cited Merino sheep, seedless oranges, and hybrid plants, as instances that should cause bee-keepers to aspire for greater results in the realm of apiculture. He said that a poor queen should not be tolerated; that color in a queen is secondary, and that if he had but one good queen he would expect the greatest good to come through her use in drone-production. Those who wish fine looking stock should heed Mr. Yates' reminder, that there are beautiful golden bees that are worthless as honey-gatherers.

PREVENTION OF SWARMING.

Allen Latham, who is a science teacher and who naturally carries the principles of science into apiculture, spoke on "Swarm Prevention." He mentioned small hive-entrances as one of the great causes of swarming. A lack of cluster room below the combs is another source. Where there is ample room between the lower line of the brood-frames and the bottom-board, excitement is reduced to a minimum, the crowding of the workers by the ventilating bees being overcome. He emphasized the importance of putting on sections too early rather than too late, crowding being one of the sources of swarming. A discontented condition of the colony is another cause. The average frame produces swarming because there is not enough room for the brood-nest. On the other hand, too large a frame is a source of discouragement to the queen because she cannot cover it. Mr. Latham is still experimenting to find the ideal brood-nest. He advises a large hive-entrance, 13 inches long by 1 inch wide, for summer and winter, believing that a lack of ventilation is one of the main causes of loss and trouble with bees.

At the close of the above talk, Rev. Mr. Marsh arose and stated that he visited Mr. Latham's home and found 80 hives, covered with Paroid paper, huddled together in the rear of the house, sweltering in the sun "like a group of Filipinos, where it was hot enough to fry griddle cakes." Upon inquiry Mr. Marsh was astonished to ascertain that only 2 colonies had swarmed during the season.

A full description of Mr Latham's "Let Alone Hive" has been issued by request, in pamphlet form, and sells for $1.00.

During the members' hour, Merrill D. Brooks of Cromwell, said that he had an acre of land, heavy rich loam, and wished to know what kind of clover to sow this spring to secure the best bee-pasturage. Mr. Crane recommended alsike.

PREVENTING TRAVEL-STAIN.

The subject of "Travel-Stain" was discussed, and Mr. Crane exhibited his patent honey-board, which requires the bees to enter the super at two sides only. He said that he welcomed any method that helps to prevent travel-stain, and that the difficulty in remedying this trouble is still great, it being minimized, however, when hives are located where honey is abundant.

MARKETING HONEY.

Mr. Crane, in opening a discussion on "Shipping Honey," enlivened the occasion with the story of a little schoolboy who wrote on the blackboard, "Johnny can kiss more girls than any boy in school." The teacher ordered him to remain after the session. Upon being urged by the other pupils to state the form of punishment inflicted, he said, "I shall never tell, but it pays to advertise!"

Mr. Crane said he had been shipping for 40 years, and had lost $1000 through broken honey. He exhibited a case of his own invention, somewhat larger than those ordinarily used, which a leading manufacturer has said will drive all other shipping-cases out of the market in 3 years. It is made of strawboard and holds twenty-four sections, each in its own compartment. Mr. Crane, who weighs 175 pounds, placed the case on the floor and stood on it, raising himself on the sole of one foot. It will cost no more than wood, and weighs but half as much, thereby saving expressage. The body and cover telescope, and four medium-sized seals hold them firmly together. It is practically twist-proof. The walls are padded with corrugated paper, which takes up the drip. Mr. Crane said that one of these cases, filled, was accidentally dropped from a table, without breaking a comb.

BEES IN WINTER.

In regard to "Wintering Bees," Mr. Crane surprised many by advocating a reduced size of the brood-chamber, on the same principle that a small stove, which cannot heat a large room, is just right for half that room. In case of an 8-frame hive he would insert a division-board and winter two 4-frame colonies. Some favored large entrances, but more wanted them contracted. Mr. Crane mentioned an instance where entrances were reduced to the size of from 1 inch to 1¼ inches, and the bees were brought through the winter in fine shape.

The Association voted to accept the offer of the Connecticut Fair Association to hold a honey exhibit in connection with the State Fair in Hartford, next September. Ample space on the fair grounds is to be allowed the bee-keepers, and $200 at least is assured them for premiums. Hartford will easily take the lead with respect to agricultural fairs, judging from the successful one held last fall, when the State Fair was revived after an interval of more than 30 years. A State Fair Committee was chosen, composed of A. W. Yates, Rev. D. D. Marsh, and Rev. E. A. Dent.

James A. Smith, *Sec.*

Contributed Articles

The Swarming Impulse and Its Control in the Apiary

BY RALPH BENTON.

Assistant Entomologist, University of California.

The swarming impulse among bees may be defined as the inherent natural method for the extension of the number of colonies, and so of the race. As such we find it an instinct deeply rooted in the race yet varying somewhat in the existing varieties and strains of bees. The degree of variation of the manifest swarming impulse we are inclined to believe is largely augmented by an attempt at uniform methods of practice. Accordingly there are some underlying features of natural swarming that must be kept steadily in mind in settling upon any given method of practice. There are five conditions that tend to induce swarming: An over populous colony; a lack of room for the storage of incoming honey; an inhibited tendency to wax-secretion; a restricted queen in ovipositing, either due to an excess of brood in the colony, or a clogging of the brood-nest with honey or pollen, or both; and the presence in the colony of a queen of a previous years rearing.

If a colony in a restricted or circumscribed hive dimension be headed by a queen of one of the more prolific varieties of bees, as the Cyprian or the Carniolan varieties, one or more of the conditions liable to induce swarming are likely to result speedily, leading inevitably to preparations for swarming and the final casting of the swarm; and I say the final casting of the swarm, for when once a given colony has begun preparations for swarming, the casting of the swarm, in the majority of cases, follows as the night does the day, despite the preventive efforts the apiarist may seek to introduce. It is thus seen that under given conditions, variety types may become a factor in the swarming problem; but with methods of practice suited to the variety and strain of bees kept, by adaptation of manipulations, the variety type may be largely ignored.

The best principle of practice in the restriction or prevention of swarming if bees representative of the more prolific varieties are kept, is thus seen to be the adoption of larger hives. This does not always seem advisable, as in the case of comb-honey production, where a crowded condition of the colony is desirable, and to this extent the selection of a variety and strain of bees suited to one's purposes is recognized to be a necessity if we are not to be troubled unduly with swarming.

Natural Swarming.

There are several methods of handling the swarming problem in the apiary, and for convenience these may be grouped into Natural Swarming, Forced Swarming, and Prevention of Swarming.

Under a system of natural swarming it is needless to say that the colonies of bees are permitted to take their own course. The queens, usually of a previous year's rearing, are fairly young and vigorous, and organize their brood-nest in goodly proportions. Stimulative feeding and manipulations to enlarge the brood-nest may or may not be practiced by the apiarist.

As the colony nears the main honey harvest the hive is found to be quite populous, and hot weather becomes more continuous and oppressive. The bees begin to gather honey more freely, and, in fact, are beginning to lack for space in which to spread out and handle the unripened honey. Quantities of new honey are therefore retained by the bees in their bodies, and this condition coupled with a uniform high temperature leads physiologically to the secretion of wax. The space for the building of new comb in the hive is limited to deepening and capping the honey-cells, and to building brace-combs, after which this tendency to secrete wax is inhibited and the colony becomes restless, beginning to cease work and to hang in clusters about the entrance. At the same time the queen physiologically tending to the production of eggs to her fullest capacity becomes restricted in ovipositing on account of having previously filled with eggs, all available brood-combs, and, as fast as the young bees emerge, the old bees lacking storage room for honey, fill the brood-combs with honey and pollen, thus further hampering and restricting the queen. The queen being one of a previous year's rearing has already produced a goodly number of drones and now proceeds to deposit eggs in the queen-cell cups already being built by the bees. The number of these cells produced varies with the variety of bees, the Oriental varieties producing more than the European varieties.

Normally, on or about the day when the first cell is capped, the old queen, decreased in size on account of the forced slackening of her egg-laying issues with the swarm, usually between the hours of 9 a. m. and noon, though frequently earlier in case of very hot weather, and sometimes later if the early hours of the day have been inclement. The swarm clusters on a near-by tree or shrub, partly, no doubt, to equalize loads, but more especially to seek a new location as evidenced by the coming and going of scout bees.

The apiarist stepping in at this juncture shakes the bees into a hive and sets his swarm upon a new stand. Should the swarm cluster out of reach in a tree, the limb may be sawed off and gently lowered by a rope when the bees can be carried and shaken into a prepared hive. I prefer to shake bees into a hive rather than in front of a hive, as the danger of a queen taking to her wings is less. To make room for shaking the bees into a hive, the central frames may be removed, and after the bees are in, replaced; the bees spreading in all directions will soon let the combs down, when the cover may be set on, one edge up for ventilation should the day be extremely warm.

Ralph Benton.

If trouble be experienced in keeping a newly hived swarm, the insertion of a frame of unsealed brood will always entice them to stay. After-swarms may be headed off by destroying the remaining cells in the parent colony with the exception of one or two well-developed ones, and a week later only the young queen is permitted to emerge to take possession of the colony. Should additional increase be desired after-swarms may be permitted to issue, sometimes three or four of these being in turn hived and set up.

Hiving With a Clipped Queen.

To facilitate hiving the swarm, or rather to eliminate the hiving by virtually forcing the bees to hive themselves, the queen may be clipped to prevent her flying. Clipping is usually done late in the fall or early in the spring, some time before the swarming period of May.

To clip a queen I prefer to remove her from the comb. This is done by carefully picking her up from the rear by the wings with the thumb and forefinger of the right hand. Then setting the comb down, grasp the queen gently from below by the thorax with the thumb and first two fingers of the left hand. This insures against any possible pinching of the abdomen and at the same time secures the legs and releases the wings. Either of the front wings, usually consistently one, for the sake of convenience say the left, is then clipped a third to a half off with a small, sharp pair of scissors operated in the right hand, care being taken that the bee in her struggles does not release any of her legs, endangering the crippling of her.

It has been my experience that a queen so clipped is perfectly acceptable to the bees, and is not prematurely replaced by the bees, as may speedily result were more than one wing clipped, or were the one wing clipped to be cropped close to the body. Some beekeepers practice giving their queens an additional clip each spring, thus identifying their age. I prefer not to do this, as it only hastens premature supersedure, and in most instances I know the age of a queen without such a mark; in fact, I favor requeening each year, and such a practice obviates any necessity for a distinctive mark for old queens.

The hiving of a swarm when the queen is clipped, is much simplified. When the swarm issues the apiarist, queen-cage in hand, proceeds to the hive swarming and kneeling down watches for the queen. Just prior to swarming the bees gorge themselves with honey so that they will be found quite docile at the time of issuance. The queen may lead off, or come out near the middle of the swarm, or not infrequently last. Usually a slight pause on the alighting-board enables the skillful apiarist to catch the queen and slip her into a wire-cloth or spiral-wire cage. Placing the caged queen in the shade of an adjoining hive, the parent colony, as soon as the swarm is well out, is dragged off its stand and usually the entrance turned away. An empty hive fitted with either combs and full sheets of foundation, or entirely foundation, or simply starters, as desired, is then placed on the old stand, and the cage containing the queen is laid on the alighting-board. The bees missing their queen will disperse in all directions in search of her, and will begin to return singly or by twos and threes to the old stand. Finding the queen, more of the bees will return, and when the swarm is well in the notion of entering the hive the cage may be opened and the queen permitted to run in with the bees, and the operation is complete.

Augmenting Strength of New Colony.

The parent colony may be treated in one of several ways. Should the increase be desired the parent colony may be set up on a new stand and either permitted to mature its cells or given either a ripe cell or a laying queen from a nucleus. The supers or top stories are usually placed on the swarm on the old stand where most of the working bees are. Should the increase be not acceptable, and it be desired rather to turn the strength of the bees toward honey-gathering, the parent colony may be placed beside the new swarm, say first on the right side with the entrance turned slightly away so that flight bees already in the field will not readily find their way back into it. The second and third day the entrance of the parent colony may be gradually swung around until right beside that of the swarm, when the parent colony may be suddenly picked up and set on the opposite side with the entrance turned away. The flight bees returning will find their way into the hive containing the swarm, augmenting the latter's working force. This repeated several times, the queen-cells having been destroyed, the parent colony in the course of 3 or 4 weeks will be entirely depopulated, its strength having gone into the swarm, when the empty hive, all brood having emerged, may be removed to the shop.

Another way of accomplishing somewhat the same result is to place the parent colony, after destroying all the cells, above the swarm, providing it with a separate entrance. At the end of 3 weeks, or when all the brood has emerged what bees are in the colony in the middle of the day may be shaken in with the swarm and the story removed. The flight bees on their return not finding their hive above, enter the swarm below, and so the swarm becomes augmented in numbers and the undesirable increase disposed of while at the same time the colony is brought through the swarming fever.

Forced Swarming.

Passing on now to a consideration of forced swarming, we recognize two general types—shaken swarms and artificial increase by actual division. In the case of increase by shaken swarms only the bees shaken onto starters go to make up the new colony, a system we will consider presently as applicable in some localities, to handling the swarming problem in comb-honey apiaries.

Dividing is usually practiced when increase is desired, and may be accomplished immediately prior to the natural swarming time in any one of three ways. Two of these ways involve an approximately equal division of the strength of the colony, only approximately equal, for that portion of the colony remaining on the old stand is always bound to be somewhat the stronger in view of the return of flight bees—stronger not necessarily in point of numbers, though usually so, but stronger in number of field-bees and hence working capacity. The evenness of such divisions is somewhat governed by climatic conditions, the variety of bees kept, and the distance to which the bees drawn off are moved. To illustrate:

If weather conditions are such that bees fly to any great extent for some days immediately following division, less of the old bees will return to the old stand; again, variety characteristics may come into play, since some varieties of bees hold to old locations more persistently, as do the German or black bees, while other varieties acquire new location with greater ease, as do the Banaters; and finally the greater the distance between the old and the new colonies, the less manifest chance of the return of flight bees to the site of the parent colony.

The possibility of the bees marking their new location more quickly and effectively is heightened if some distinctive land-mark be given them as, for instance, a bottom-board slanted in front of the entrance for a couple of days to attract their attention. The importance of this is realized when it is appreciated that by far the greater reason for the return of old bees to the parent site is because they unwittingly fly out after having been moved, without first getting their bearings, and when they come to return home obviously they return to the old location, being guided thence by old and familiar land-marks. The value of something about the entrance of the new colony to arrest the attention of outgoing bees thereby causing them—if you will pardon the expression—to "sit up and take notice" of their new surroundings—results in a return of a larger percentage of the flight-bees to the new location.

Berkeley, Cal.

(Concluded next month)

Management of Sectional Hives

BY F. GREINER.

The article on "Modification of Shaken Swarms," written by myself last summer for the American Bee-Keeper, and reproduced in the October number of the American Bee Journal, was apparently not worded carefully enough to make everything perfectly clear. At least I judge so from some inquiries I have received. The principal trouble comes from the fact that some readers do not fully understand the workings of the sectional hive. Before we can fully understand a writer we ought to be familiar with his hive. Certain features of the sectional hive are not to be observed from the outside. For years I used quite extensively what I called a sectional hive, containing 8 loose, hanging frames, 5 inches comb-space. It was a hive which made manipulations complicated and difficult, and led me to condemn the sectional or divided brood-chamber. Now, after I have taken quite a few hives of the Hand, Aikin or Heddon pattern into use, my old enthusiasm has again awakened, and I expect to realize dollars and cents from the advantages which these low brood-chambers afford when properly handled.

The principal difference between the sectional hive and the standard—a difference not apparent from the outside—is that the frames of the former are not only closed-end, standing frames, but also close-fitting against the ends of the hives, thus leaving no bee-spaces, no places for bees to loaf, between and around the end-bars of the frames. If the combs are built down to the bottom-bars of the frames there will then be only the regular spaces between the combs for bees to congregate.

From the shallowness of the combs it may be judged how easy it must be to drive the bees from one section (brood-chamber) into another for any purpose. In fact, herein lies the advantage, or the principal advantage. This, in connection with the other one, of interchanging the different brood-sections, makes us master of the situation.

Any one wishing to adopt the sectional hive will be greatly benefited by reading what Heddon, Aikin and Hand have said in the different bee-publications. The last named two have given their methods of manipulations in Gleanings in 1906 and 1907, and Mr. Aikin is just now writing up bee-keeping in Colorado for the American Bee Journal. Those interested in the sectional hive may be the gainers by watching the articles of the last-named writer.

As a bit of advice, I want to say that before adopting any other man's methods we ought to consider the possible difference of our own conditions from those of the writer, for what may fit one case may not the other. The great differences of localities—yes, and even honey seasons in the same localities—are factors to be taken into consideration, and which make bee-keeping so much more interesting than many other pursuits. We must study the subject and adapt ourselves to the often varying conditions. Mr. Aikin in Colorado has a long-continued, but generally not heavy, honey-flow from alfalfa. Mr. Hand has a very heavy flow from basswood, but of short duration. Therefore their methods must differ widely, although each uses a hive very nearly like the other.

A marked difference between the hives of these two bee-masters is found in the frame. Mr. Aikin uses a top-bar ⅞-inch wide, ⅜ thick, bottom-bar of same dimensions. Mr. Hand uses a top-bar nearly the same, but with a bottom-bar only ½ x ¼ inch. Why these two practical men have decided so differently would be interesting to know. Mr. Aikin also uses a follower and spring. I myself favor the use of a follower, but prefer a narrow bottom-bar. I am not sure that I want it as narrow as Mr. Hand's.

As to the construction of the section-cases, that is of minor importance. I do not expect to use anything different from what I have, viz., the wide-frame super, which is so constructed as to protect both the top and the bottom of the sections. Plain sections and bee-way sections with bee-ways cut out clear to the V-grooves, come out of the wide-frame supers so clean as to need but little scraping to make them perfect and ready for the shipping-case, while on the other hand sections from supers, which expose the tops and bottoms, can often not be made presentable without a great deal of labor. The bee-keepers, however, will always differ on this question as on many others.

Habit has much to do with this matter.

Some of the questions sent me need a direct answer, so I will briefly add: I prefer and use an 8-frame hive, no cleats, but hand-holes on all four sides; I use a telescoping cover or roof like Mr. Aikin, and Mr. Alexander, with an under cover or honey-board; I have used them for over 30 years, and see no reason for changing. The bottom or floor board has a half-inch bee-space. This is handier for all my operations than one with a deeper space.

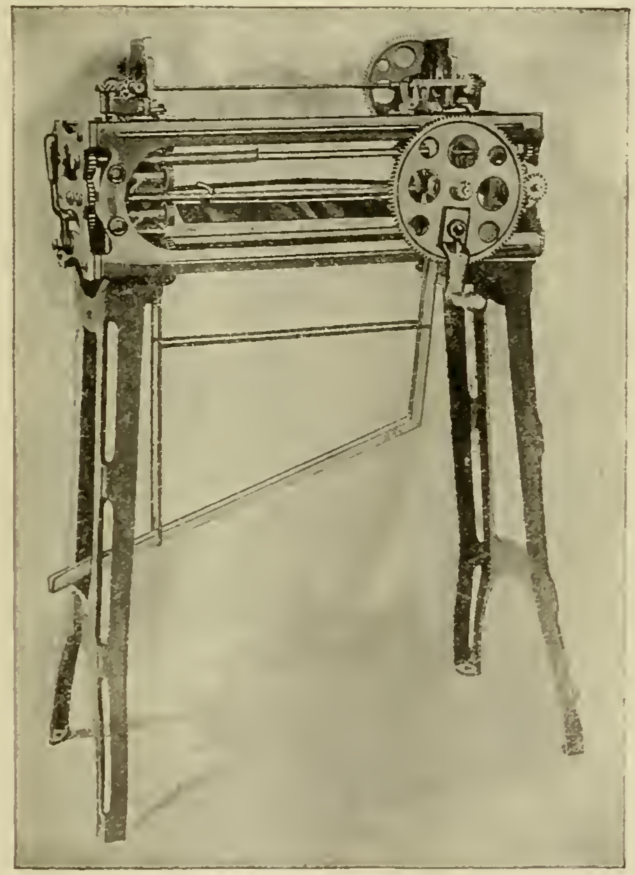
I use 4 x 5 sections, some with bee-ways and some without. I never use full sheets of comb foundation in sections. I am too conscientious for that. I know that I can sleep better for dealing fairly with my fellow men. Brood sections are shallow brood-chambers full of brood and honey. When such are removed from any hive, as often happens, they are used to strengthen other colonies, or to make increase, or in various ways.

Naples, N. Y.

The Miller Automatic Decapper

BY ARTHUR C. MILLER.

The problem of devising a machine for decapping honey-combs, at first glance seems simple, and so it would be were all frames alike and all combs built out well beyond the surface of the frames. When one attempts to make a machine which will take any of the frames in common use, regardless of width of end-bars, length and width of top-bar extensions, rivet supports or standing, one finds the problem not so easy. Then, too, the combs must be cut smooth and flat whether they project beyond the frames or are well within them. The machine shown herewith does all these things, and calls for no adjustment for any dimension of frame except for length, and that is a matter of but half a minute. As few bee-keepers have more than one length of frame in a yard such adjustment is not often called for.



The Arthur C. Miller Automatic Decapper.

The machine cuts with two reciprocating knives moving across the surfaces of the comb. The knives are spaced from each other by a lever at one end of the machine, a mere push of the finger serving to operate it and send the knives to the midrib of the comb or entirely out of action. Combs are dropped in as easily as into the hive, and as the bottom-bar approaches the knives they automatically open until it passes and then go back to the depth set by the lever just referred to, and the same operation occurs at the top-bar.

The combs feed through in exact relation to the speed of the cutters, so that there is no crowding of the combs on to the cutters. As soon as a comb is finished it drops out below. The device for catching it is shown way down, as when delivering a comb, but when at rest it is up where it takes the comb without a jolt.

The cutters hang free in the machine and are readily lifted out for sharpening or cleaning. As they move at high speed they do not gum up or clog as does a hand-knife.

Any sort of receptacle may be used to catch the cappings, or capping melters may be attached.

The machine as illustrated is for hand-power, but it may be driven by any other power.

Food of Larval Bees, Etc.

BY C. P. DADANT.

In the American Bee Journal for April, Mr. McNeal mentions the term "royal jelly" for the food of the queen larvæ and says, very correctly, that this name, which is fanciful and high-sounding, "leads one away from the truth." He is correct. The royal-jelly, so-called, is not known to be the same in composition as that given to the young worker-larvæ. But the name is not any more improper than many others that have been handed down to us by our forefathers.

The term "queen," for instance, which is universally accepted, is now known to be a misnomer, for the queen is anything but the ruler of the hive, and, even in swarming, though we know she makes her anxiety and desire to swarm plainly visible, she is positively subservient to the wishes of the workers which either swarm or abstain, as their judgment dictates. Some radical reformers who hate *even the terms* applied to royalty, have gone so far as to ask for a change of name for the queen-bee, under the plea that in a republic like that of the hive the term "queen" is absurd; that she was the beloved mother of the colony, and nothing else. So they began to call her the "mother-bee," until some one raised the objection she was not a mother, either, until she was impregnated and laying eggs. This of course had to be recognized by everybody. So the term "queen-bee" has remained and will probably remain as the most satisfactory. So it is with "royal jelly."

All the latest scientists agree that the royal jelly and the food given to the worker-larvæ during the first 3 days of their existence is the same, though they do not altogether agree yet as to the origin of this food.

Schiemenz, a German microscopist, ascribes the production of the milky food generally known as "royal jelly," to the salivary glands of the worker-bees, the first ones of which are very much developed in the young bees, at the time when they remain in the hive and take care of the brood, while the same glands are very much shrunk in the worker that has become an active honey-gatherer. This view, sustained by Cheshire, is combated by Schonfeld, another German, and following him, by Cowan, the editor of the British Bee Journal. These writers hold that it is impossible for the bees to supply the food in this manner. They maintain that the milky food is nothing other than chyle produced in the digesting stomach and forced back to the œsophagus by a folding upwards of the stomach-mouth to connect the œsophagus with the chyle stomach, through the honey-sack, without mixing the contents with the contents of the honey-sack (Cowan, "The Honey-Bee," page 122). To my eyes the former explanation, as given by Cheshire, is the more plausible, and I am inclined to believe that Schiemenz is right.

But all the scientists — Schiemenz, Schonfeld, Cheshire, Cowan, DePlanta, etc.—agree in stating that the food given to the worker-larvæ after the first 3 days of their existence is different from what is known as "royal jelly." Cowan says:

> "The worker-larvæ receive similar chyle food the first 3 days, and on the fourth day it is changed, and then the larvæ are weaned, for the first pap has a large quantity of honey added, but no undigested pollen, as Leuckart had stated. The drone-larvæ are also weaned, but in a different way, for, in addition to honey, a large quantity of undigested pollen is added to the food after the fourth day."

Cheshire in turn says:

> "Microscopical examination of the food given to very young larvæ reveals no trace of a pollen-grain, and shows that it resembles in nothing any part of the contents of the chyle stomach of the nurses. It is, on the contrary, just such a fluid as a secretion might be. As, however, the larva gains size and power, the process of weaning commences, and its food undergoes a change, having now undoubted pollen, honey, and water added to it, the glandular secretion being of course gradually withdrawn. The pollen-grains, moreover, are living, and are generally found in a growing condition, proving that they have never entered the stomach of the nurse, and certainly that they are not semi-digested. . . . In the case of the queen-larva, I discover that weaning is not adopted, but that secretion, commonly, though as I hold, erroneously called royal-jelly, is added unstintingly to the end; so that at the close of the feeding period, an abundance of highly nutritious food, which I apprehend does not intrinsically differ from that at first given to the worker-larva, remains, and to which the chrysalis adheres for some time, possibly continuing to draw from it, by osmose (fluid diffusion), material which aids its development. The queen-larva does get a very small addition of pollen, the residue of which collects in the middle bowel; but this seems to be rather accidental than otherwise."—("Bees and Bee-Keeping.")

The two writers above mentioned, although not agreeing as to the origin of the milky food popularly called "royal jelly," both agree that there is a difference in the coarseness as well as in the quantity of the food fed to the queen and to the older worker-larvæ, respectively. They represent the most practical views of the European scientists, who have thus far been ahead of us in microscopic studies.

There is still another point to be settled as it is seen, on the origin of the food. I take it that Cheshire is right. Yet, all these matters require confirmation. Cheshire has made quite an error, according to our Dr. White, of Washington, as to the bacillus of foul-brood. Perhaps our young generation of scientists will set many matters right that are yet in dispute. One thing is certain, we have to use a great deal of caution in accepting new assertions and the theories that have proven true—such as the discovery of parthenogenesis, now an accepted fact—have to be selected from among dozens of more or less extravagant statements, and the European scientific publications are constantly replete with all sorts of new theories or ill-made experiments.

The Bee-Sting and Formic Acid

Now permit me to refer to another part of the same number (April), of the American Bee Journal, page 138, which contains an article from the pen of my old friend, J. E. Johnson, who used to inhabit our State, but is now in New Mexico.

Mr. Johnson says that the poison of the bee-sting is not formic acid, and he asks Dr. Bohrer whether he has analyzed it. I am not an analyst, but I can quote a number of authorities who have analyzed the poison and find formic acid in it. According to Girard, (Les Abeilles, page 60) the poison of the bee is "concentrated formic acid, mixed perhaps with toxic substances."

Mr. Johnson says that formic acid is very volatile and that the bee-poison is not. This is in part an error, for if it were not volatile, in part, how could it cause our eyes to "button up" just as if we were smelling of ammonia, one of the most volatile substances?

Again, the microscopists all agree that in a short time, when exposed to the air, the poison changes to crystals. It could not very well do so unless a part of its constituents evaporated readily.

Formic acid, originally obtained from the ant (formica rufa), according to the U. S. Dispensatory, has a smell which is very peculiar, a smell of ants, and so has the poison of the bee. Formic acid is used medicinally in chronic paralytic diseases (Dispensatory, page 1495), and so is the poison of the bee. This is another evidence that the sting-pouch contains formic acid, though very probably mixed with the element toxin, mentioned by Mr. Johnson.

I do not agree with Dr. Bohrer in the statement criticised by Mr. Johnson, that comb honey contains poison *from the sting,* but I do believe that all the products of the bee contain traces of formic acid, because bees, like ants, are producers of formic acid, and this is the reason why both the poison and the honey are recommended for rheumatism or paralysis.

Altitude for Alfalfa.

Another point on which I differ from Mr. Johnson is his statement that alfalfa is a high-altitude plant. It may succeed best in this country in high altitudes, but in Europe it grows finely and produces great crops, clear down to the sea level. But nevertheless, I envy the fine climate that he mentions. I have never made a stop in New Mexico, but trust I may some day be able to visit him, and have a little friendly chat on our bee-questions.

Hamilton, Ill.

* * *

Colony-Diagnosis in Spring

BY ALLEN LATHAM.

When the first warm days of spring come every enthusiastic bee-keeper itches to open his hives. If he has had much experience he withstands the temptation, waiting till a month or so later before he breaks into the warm brood-nests of his colonies. There are some exceptions among those of much experience, but the rule is a safe one, and few, even of experts, can afford to neglect it.

"How, then," asks the beginner, "can I know about my bees, whether they have a good queen, plenty of honey, etc?" Then he enquires finally—"What is the harm?"

I will answer the last of the two questions first. The harm is in loss of queens. Until I stopped my practise of early examination of colonies I invariably found about one out of 10 queenless a month later, though at the time of the early examination these queenless colonies were among my most flourishing ones. Why the queens disappeared was a most puzzling problem to me till I discovered this answer. At a certain period in spring every normal colony will have a vast majority of old bees and a fair-sized brood-nest. Two weeks later the colony will have a vast majority of young bees and a somewhat larger brood-nest. If the colony is disturbed at the time the old bees are in great majority, old bees that are wearied of brood-rearing and impatient in every way, the queen often falls victim to the impatient whims of those old bees. Two weeks later the vast majority of young bees will rule the action of the colony, and the queen will not be molested.

Whether the answer just vouchsafed is correct or not is of little moment to me, knowing that I now no longer am troubled with those vexatious losses of fine queens in spring. Rarely indeed does a colony now prove queenless in spring under my present management. This spring the 70 colonies in my home yard all show ample evidence that they are headed with good queens, though I have not yet opened up a score of them except to slip in combs of honey where I thought it might do some good.

Now for the first of the two questions: If the bee-keeper has done his duty in the previous fall he need not worry over the possible poor condition of his colonies in the spring. In the fall he should see that every colony has a vigorous queen and plenty of stores, and then he will know that such a colony is good till the first of the next May.

But, you say, the best of us will be caught napping. Yes, and my remedy for this is to wake up, and with eyes wide open learn the condition of the colonies *from the outside.*

There are various ways to find out the spring condition of a colony without opening the hive.

First of all the spring flight tells me much as to vigor of bees and numerical strength. If bees fly with snappy, vigorous flight, and crowd the entrance, I know the colony is well-to-do.

In a few days, early in March, I watch for water-carriers. Water-carriers are quickly recognized by an observing person. They tell us that breeding is going on.

Later the pollen-carriers tell a good story. If pollen on a warm forenoon goes in rapidly, and in large loads, I know that the colony under observation is beyond question in a prosperous condition, headed by a good queen.

About 3 weeks after the first water-carrying, one can look for signs about the entrance in early morning. The immature bees thrown out tell a true story. Portions of worker pupæ or imperfectly developed workers show the undeniable presence of a fertile queen. Drone-larvæ are a strong indication of a drone-layer (I mean drone-larvæ in early April), and a colony showing such calls for immediate examination, unless it shows by other signs that the drone-larvæ are only some very early drones from an unusually pushing colony. Last season I found 7 such colonies showing drone-larvæ in early April. Knowing that these colonies had been given virgin queens late in fall for a special mating, I was confident without further examination that each of those colonies contained a virgin queen still. Queens were immediately ordered from the South, and every colony thus treated, without other aid, developed into a surplus-storing colony.

After young bees have emerged in fair numbers any warm forenoon will show the flight of nurse-bees. The veriest amateur should quickly learn to distinguish young bees in the first flight. The flight of young bees is a sufficiently good guarantee of the internal condition of an undisturbed colony.

Thrown-out pupæ and bits of immature bees, garnered through the efforts of the bees to dislodge a wax-worm from sealed brood, may not always be present to tell the story in the early morning examination of the entrance. In such case look for the refuse thrown out at night. If it is large in amount it points beyond doubt to the expanding brood-nest. Only good colonies show a littered entrance in early morning—an entrance that was clear the evening before.

Warmth is a good indicator by which to diagnose the brood-nest of a colony. Thrust the hand under the packing or the cushion and find by the temperature the extent and progress of brood-rearing. Again, at the close of the day a current of warm air fanned from the entrance is ample proof of extensive brood-rearing. The lazy hum of ventilating bees is music to the ears of the initiated.

Indeed, the ways of diagnosing the condition of a colony are almost numberless. An observing person knows of scores, some of which he can describe, others of which he knows only by intuition. One who is living much among his bees gets to disregard the normal except as it is a source of restful content, but the abnormal is a glaring sign-post. He may not be able to say what the sign means, but he sees the sign and proceeds to investigate. I recall an instance: A party of several bee-keepers were wandering about the yard of one of the number, when suddenly one of the party exclaimed, "What is the matter with this colony?" All but two of the persons were passing the colony without in the slightest even dreaming that something was wrong there. Investigation showed that this colony had not so much as one drop of honey in its combs. Starving bees were in and about the entrance is sparse numbers, only enough to catch the eye of the observing, but the interior showed huddled hosts on the verge of starvation.

We see the laughable extreme when the amateur congratulates himself that his bees are hustling in the honey. He tells his experienced friend about the splendid honey-flow his bees are having. This sage friend, still warm from a skirmish with robbers (for the fields have afforded no nectar for ten days), visits the amateur's small apiary and *tries* to explain to the young man, who has eyes that see not, how to recognize a robber-bee.

More than half of the pleasure of bee-keeping to many of us is the ceaseless study which the bees afford. We like to get bumper crops of honey, and we prefer that our bees secure a profitable surplus every year, but we get extremely keen enjoyment in mastering the problems of which the hive and the honey-bee furnish such an unending stream.

Norwichtown, Conn., April 29.

Something About Pollen, Propolis, Etc.

BY G. M. DOOLITTLE.

A subscriber to the American Bee Journal wishes me to answer some questions through its columns, as he thinks the answers will be interesting to its many readers. He says that some of his colonies store large quantities of pollen in the sections in some years, and asks, "Why do bees store pollen in sections?"

The storing of pollen in the sections or surplus apartment of the hive is largely brought about by the queen filling the brood-chamber so full of brood that there is little room below for the pollen which comes in from the fields. Then, the very complete doorways or entrance into the sections of the present day have something to do with the matter, also, as well as the use of small brood-chambers. This storing of pollen in sections is something which does not very often happen with large hives, and was comparatively unknown in the days of our fathers, when only auger-holes through an inch thick or over, bored at the top of the hive, was the doorway to the honey-boxes. But with the small brood-chambers of the present day it is not at all unusual for this state of affairs to exist, especially where a queen-excluder over the brood-combs and underneath the sections is not used. The queen-excluding honey-board is a great help along this line. This excluder, is hard to squeeze through with the pollen-baskets well loaded with pollen, as it often pulls the loads of pollen from the baskets, so the bees are loath to go into the sections through it with pollen, while they can go through with comparative ease with loads of honey. Then the pollen, as a rule, is stored close to the brood, and for this reason large hives tend to keep it out of the sections, because, as in this case, there is usually quite an amount of sealed honey between the brood in the hive below and the room in the sections above, this acting very much as did the auger-holes of our fathers. But, as more honey from new or prime swarms can be secured from small brood-chambers, I suppose that these will continue in use with very many, so that the queen-excluder has the right of way with such as use these to keep the pollen out.

He next asks: "Is pollen a food for those bees which are seen going in and out from the hive? or what is it stored for?"

Pollen is not a food for the mature bees, or to any extent, but it is used very largely in compounding the chyle or chyme which is fed to the larvæ or young bee while in the larval state, hence when the bees are breeding largely, as in June in our northern States, large quantities of pollen are consumed. Pollen, honey and water are taken into the stomach of the nurse-bee, and by a process of digestion or secretion, or both, formed into milk or chyme, which is the only food of the bee while in the larval state, on something of the principle that the pigeon turns wheat which it takes, to "pigeon milk," to feed the young pigeons. When the nurse bees are thus manufacturing great quantities of chyme, if from any reason the supply of honey entirely gives out, at times of prolific brood-rearing, the larvæ are sucked dry by the mature bees so they (the bees) need not perish, and if the famine still continues, the nurse-bees feed the chyme which they already have prepared, to the mature bees instead of the larvæ, and thus a few days from starvation is gained, which often allows the dearth to be tided over, and and the colony be kept alive.

Next I am asked: "What is bee-bread?" If I should answer, only pollen, I would be quite correct, but this would not be such an answer as I would like to receive were I the questioner. The term "bee-bread" is one that is rarely heard at the present time, as pollen has taken its place; but 50 or 60 years ago the word "pollen," as applied to the farina of flowers which the bees gather, was hardly heard once in a lifetime. It was always bee-bread that the bees were bringing into the hive. But that the reader of the present day can understand better, I will explain a little.

All close observers know that nearly, if not quite, all of the pollen stored prior to the flow of nectar from white clover, is left with the mouth of the cells containing it wide open, and is used for the every-day feeding of the larvæ. White clover now comes on, and the pollen gathered from that and the rest of the clovers has a different color from that gathered from any other flower, the same being a dark-brown or greenish-brown color, while most other pollen are of a much lighter color. Now, very much of this clover pollen, instead of being used for the immediate wants of the brood, is stored in the cells until they are from two-thirds to three-fourths full, when the remainder of the cell is filled with honey, and the same capped over just the same as any or all cells of honey are capped, this evidently being done to preserve this pollen over till some future time when it would be needed for brood-rearing, when no pollen was to be obtained from the fields. Now, such pollen stored under honey, was the "bee-bread" of our fathers, and was often called for by many children who liked to eat such combs of "bread and honey," but the older ones preferred their honey clear. One of the strange things about this matter is, although I have tried to keep a close watch during my 40 years of bee-keeping life, I have never observed any other pollen preserved under honey except that from the clovers—white, red or alsike.

Again I am asked: "Why do some colonies of bees store more pollen than others?" Pollen accumulates in the combs only as brood-rearing does not go on rapidly enough to use it up, hence a failing queen, or a queenless colony, is liable to have more pollen stored in the combs than colonies having very prolific queens. The attention of the apiarist is often first called to a queenless colony, or one having a failing queen, by the large quantities of pollen found in the combs upon opening a hive that has been left undisturbed for a long time. I have many times in this way found queenless colonies when opening the hives of those having cast swarms 3 or 4 weeks before, with their combs half filled with pollen. But there are times where the combs of all colonies are crowded with pollen from the great amount which the bees see fit to collect when the hard maple and wild grape are in bloom in this locality. But as there is a dearth of pollen during the next week or so following, all of this is turned into brood by all colonies having good queens, and for this reason it is a blessing rather than otherwise.

Again he says, "What is propolis, and where does it come from?" Propolis is a resinous substance gathered by the bees, and comes very largely from the buds of the horse chestnut and Balm of Gilead in this locality. When gathered it is of a salvey nature which allows of its being worked in warm weather, but which is hard and brittle when it has aged or grown cold from the approach of winter. It is used to stop all cracks in the hive not large enough to admit a bee, and to smooth over all uneven surfaces about that part of the hive they come in contact with when clustered. Where too much of it is not gathered, it is a great blessing in making all tight, dry and nice, but where it is too freely gathered and plastered about, so as to run down over the frame and sections, it almost becomes a nuisance. Where there is little or no propolis gathered, wax is often used to take the place of it, though it is not used to any such extent as propolis is.

Lastly he wishes to know, "Can either pollen or propolis be put to any domestic use?" I think not, or, at least nothing of sufficient amount to pay the bee-keeper for saving either. As far as I know there has never been any effort to use pollen in any way; but I believe attempts have been made to use propolis as an ingredient in making some salves. Propolis also contains more or less wax, and of late some think the amount of sufficient value to pay for the labor in rendering it, but with me I think it a doubtful problem for the man who can command $1.50 as a day wage.

Borodino, N. Y.

No. 5.—Colorado Bee-Keeping

BY R. C. AIKIN.

March and April in Colorado are rather trying months. In March we simply know little about "where we are at" in the northern end of the State; it may be warm and pleasant all the way through, and it may be partly warm and some very cold. I have known a temperature as low as 18 to 20 degrees below zero after the middle of the month, and as high as 90 above, but not in the same year. As a rule we get one or two dips to the vicinity of zero during the month. This dry country usually gets more moisture in the months of March, April and May than in any other period of the same length. Another thing peculiar is, that up to May, and often in that month, the moisture comes either in snow, or rain turning to snow, then clears cold and calm, and the first night of clear is when we get the intense cold. The fact is, that it is in snowy winters that we get our intense cold, for so sure as it clears with the ground covered with snow, then it takes a long thermometer at the bottom to register.

April rarely closes without some freezes, and often with several, and sometimes pretty sharp. So you see this is a testing time for the bees. We may think when there is a warm spell in March, and bees flying and getting pollen, or going to the mills and getting flour, that we have safely wintered; but it is not safe to count yet—wait until about May 1st; if any have failed to mature enough brood so as to have enough workers of recent hatching to warm and care for a patch of brood they are doomed. Some may have some old bees still alive at June first, but it is a rare case for them to hold out that long.

Uniting Weak Colonies In Spring.

If you have a goodly bunch of bees in some hives, but either too few to mature brood or they are queenless, do not think you can save them by adding them to some other weak colony. Those old bees will not last long enough to be of any help; it is hard to make them stay where you put them, and they are almost sure to kill enough queens to leave you worse off than before. You may, however, give them some ripe and just-hatching brood, so that within a very few days there will be enough bees hatched to care for the later maturing brood, but remember that this takes good judgment to succeed, and what have you when it is done but a bit of a queenless colony? And any queen reared in such a colony is worthless.

If April be a pleasant month, and if the colony has been in a prosperous condition and building up, now is the time to cut off bur-combs and clip queens, to rearrange the position of brood-combs, to take out drone-combs left over from the previous season, and such work. But you will have to watch your chance and work when there is field-work for the bees, or work in a tent or some protection against robbers. In this part of the State the cottonwood trees come into bloom usually from April 15th to 20th—the earliest I have known in 20 years was the 12th, and the latest the 25th. Farther south and in more favorable parts the time will be earlier. The cottonwood is a State-wide tree where there are trees bearing pollen and nectar, so when these trees are in bloom is when, and the earliest date that most of us can find, field-work sufficient to put the bees in shape for handling. It is not wise to try hive and frame manipulations any time in the spring that bees are not occupied with bringing in stores of some kind, for the nuisance of robbers makes it almost impossible to do the work.

As stated above, do not handle frames and bees except when they are gathering some kind of stores, unless it is a case of necessity for some reason. The presence of robbers is sure to excite the colony and make them very irritable, and when so they will ball queens and also fight the operator. Very many queens are lost at this time of the year by injudicious manipulations. A queen lost in the early spring is very hard to replace, and in many of our Colorado localities it is almost impossible at this time to get a queen reared that is worth even temporary use, unless by feeding and in the best colonies. Then, too, this is a time when it is most important to have every queen doing her best. Localities will vary, owing to latitude and altitude, and varying sources of supplies, but the principles above must be applied if best results are obtained. In the spring, handle bees just as little as possible when robbing will follow.

Supersedure of Queens.

If you have allowed any old queens that are about to pass their prime, or if you have poorly reared ones, such as would be the result from those reared in weak colonies or early in the spring, the kind called starved queens, now is the time they will begin to disappear or be superseded. Here is one of the worst things about allowing the bees to do their own superseding, so many of the queens fail in the spring before the colony is made ready for the honey-flow, and such failure usually means an unprofitable colony for that season. To have all colonies with queens that have not passed their prime will get more bees and stronger colonies ready for the flow when it comes. It will also prevent some early swarming, for it often happens that a queen will do a good business in the early spring and get a very fair colony so that the apiarist thinks he has a good queen, only to be disappointed just near the flow, to find the combs not as full of brood as he expected, or the same with one or more queen-cells started. And if as I said, the colony has built up to pretty good strength it often happens that these superseding colonies will *swarm early*. I know that very many early swarms, say in April and May, in this country were just that kind, and I have had a large experience and observation along that line.

To breed from starved queen-mothers is not to be thought of; but if one has *good* old queens, and there is supersedure in the spring before the main swarming season, it may pay well to save such cells if one has the brood and bees necessary. I would form such into nuclei, and endeavor to have them mated; such queens are usually well fed and have the normal vigor if the colony superseding is fairly well stocked with bees and honey. If you can save such queens and get a nucleus started with a young laying queen in April or May, they are almost certain to make good colonies for the next season, and often if there is an August or late flow they will pay well in surplus that same season and can usually be trusted to go through the summer without swarming.

In this country I would prefer to make all my increase in April and May, if we could get the necessary bees and produce good queens. As said above, we can rarely rear good queens here before the first main flow in June, then there is usually abundance of queens and great quantities to spare, but then is when we cannot spare the bees to make the increase—we must have the greatest number possible in our supers.

And while speaking of swarming, and of keeping all the workers at superwork, if comb honey is produced, there is but one successful way in this country to get good results in finish, and that is in very populous colonies. There must be a strong force of bees, for several reasons. If the nights were hot as well as the days, so that the apiarist would feel like sleeping outdoors with out covers, a comparatively strong colony of bees might be expected to keep the super warm and be out at daylight the next morning; but here the mornings are quite cool following a cool evening and night, and many times the colony does but little fielding before 8 or 9 o'clock. Strong colonies are necessary to sufficient heat.

You may say that protection, such as an outer case over the super, would help out, and so it would. There is a more serious condition we have to contend with, and that is slow honey-flows, often intermittent besides. If your weaker colony had a strong or rapid flow, so as to keep them hard at work all night ripening and storing what was brought in during the day, so that the activity would keep up a high degree of animal heat, to be followed the next day with a like flow, we could expect good superwork from almost any fairly normal colony.

But somehow our flows are not regular; they are often slow, and what we would call tedious, so tedious that neither the bees nor the master knows what to do next. There may be 2 or 3 days that encourage to super-work, only to be followed by a lull of a day or two that discourages super-storing, and often even starting at all in the super. To get prompt starting in the super followed by a continued work there, we must have very strong colonies, so strong that they keep up the necessary heat day and night, so strong that there are a host of fielders sufficient to find some honey when it is to be had at all, and so keep up business in the super. To allow a colony to stop work in the super discourages and brings about lethargy, causes a crowded or honey-logged brood-nest, and not only cuts off the brood that should be being prepared for later flows, but induces swarming. That is why colonies of only normal strength are more likely to swarm than the very strong ones.

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Using Combs that Bees Died On.

Are combs of honey that bees died on fit to put bees on again? INDIANA.

ANSWER.—Yes, it's all right. Sometimes the top-bars will be badly daubed with the feces of the bees; if so, scrape them off.

Eight-Frame or 10-Frame Hive?

1. I am a beginner in bee-keeping, and don't just know what size of hive to use, whether an 8 or 10 frame. I expect to run mostly for extracted honey. Which is best?

2. Will a 10-frame hive prevent swarming more than an 8-frame?

3. Do you think the bees will gather more honey in a 10-frame hive than they will in an 8-frame? IOWA.

ANSWERS.—1. A 10-frame is probably better for you; especially for extracted honey.

2. Yes, the larger size is of some effect in preventing swarming.

3. Not necessarily. Of course a stronger colony ought to get more honey, but just as strong a colony can be in an 8-frame hive as in a 10-frame, for 2 stories of the 8-frame can be used if need be.

Italianizing—Rearing Queens—Loose vs. Nailed Bottoms.

1. Would it be all right to send for an Italian queen, and when she arrives look in the hive, catch the black queen, and then put the new queen in?

2. How long after the queen lays eggs, and they are capped, will the bees build queen-cells?

3. Which is better, to have the bottoms loose on the hives or have them nailed on? CALIFORNIA.

ANSWERS.—1. Yes, many prefer that way.

2. Not sure I understand. If you mean to cage the queen in the hive, queen-cells may be started by the bees in a day, or not for several days. If you remove the queen, cells will generally be started in 24 hours or less.

3. The best way is to have the bottom fastened to the hive by means of staples, so that you can remove it at any time you like. I wouldn't have a bottom that could not be fastened on, and a bottom that couldn't be taken off would be worse still.

Wire Excluders and Honey-Boards.

Have you tried the new queen and drone excluders, or honey-boards, made of wire? Have they any claim to be classed as an improvement on the Tinker perforated zinc, or is it only a scheme of the manufacturers?

Thanks for the lift you gave the T-super. I think it has no fault other than that it is too simple for the manufacturer to charge three prices for. WASHINGTON.

ANSWERS.—I do not use excluders under supers, so I don't use many excluders, although for some purposes they are indispensable. Having quite a stock of the old kind of excluders on hand, I have never tried the wire excluders. I don't suppose there is a great deal of difference, but one would suppose that the bees would like the smooth wires better than the sharp edge left by the punching of the metal for the perforations.

Don't be too hard on the manufacturers. If there is very little call for an article, they are hardly to blame for not pushing such an article. One trouble, perhaps, is that intelligent men have condemned the T-super because they did not use it in the right way. If used correctly, I don't believe there is a better section-super in existence. An unfortunate thing is that one of the leading manufacturers has represented the T-super in a catalog in such a blundering way as utterly to misrepresent it. I don't think there is any maliciousness in the case—merely ignorance.

Foundation Fastening—Wiring Foundation—Compression for T-Super.

1. Please give directions for using a Parker Foundation-Fastener.

2. Can it be used for fastening full sheets of foundation?

3. Is it necessary to wire foundation in brood-frames where the hives will not be moved very much?

4. Do you use any kind of compression in the Miller T-super? MINNESOTA.

ANSWERS.—1. Didn't you get directions for using with your fastener? Put the section upside-down under the fastener, lay the foundation edge upon the middle of the section top-bar, raise the lever so as to press pretty hard upon the foundation, draw back the lever so as to slide the presser off the foundation, at least partly, lower the lever and remove the section.

2. I hardly think so.

3. Yes, unless foundation-splints are used.

4. There is no "Miller" T-super. The T-super is not my invention. I got it from D. A. Jones, of Canada, and I never could find out where he got it. I use a single super-spring in each super. It is crowded between the follower and the side of the super, at the middle.

Golden Italians.

1. What is the difference in appearance between the golden Italian and the Italian?

2. Are they a larger bee than the Italian?

3. Are they just as good honey-gatherers, and are they just as good in every respect as the regular Italians?

4. I have 14 colonies of bees taken from the cellar on April 3, and I never saw the hives so full of dirt in front before, and now where they fly out, close around the hives, everything is covered with black-yellow spots. Is this a disease in my bees? If so, what is it, and what can I do for them? Otherwise they seem to be all right, and have plenty of bees in the hives. I never fed them in fall. They had plenty of their own gathered honey—from 56 to 78 pounds in each hive. IOWA.

ANSWERS.—1. Italians, as they come from Italy, have 3 yellow bands, the first band (toward the head) being not very conspicuous. Goldens have 5 yellow bands.

2. No.

3. That question can not be answered by yes or no. There are Goldens and Goldens. Whether they are as good as the regular Italians, taken as a whole, is a question.

4. Don't worry. The bees are probably all right. Those spots are merely the droppings of the bees that have emptied themselves.

What Ailed the Bees?

The other day I found I had lost 2 more colonies of bees, one old and one new. The new one was full of honey and some dead brood. The brood-cells were all capped except one. The dead brood appeared natural. The old colony's hive was also full of honey, and on one of the combs there were a few bees. Half of them were dead, and the other half were able to crawl some, but could not fly. On another comb were a few more dead bees, but no brood. The honey I took out of the new colony has a dark, yellowish-colored substance in some of the cells scattered through it; pollen, I suppose. Some people here call it bee-bread. What brood I found was not black, and did not smell offensive, and what few sick bees I found could move about some, and their bodies were not swelled, neither were the bodies of the dead bees, so I concluded that it was neither foul brood nor paralysis. If you know the cause, please explain.

There is a weed that grows here called aster, that yields honey in the fall, and there is always an abundance of white clover. The winters are mild, and last winter unusually so. KENTUCKY.

ANSWER.—I am puzzled to know what is the trouble. Aster honey would not account for it. It is possible that there is no disease present, the colonies dying off chiefly from weakness. Many colonies are lost in that way.

Introducing and Rearing Queens.

Last summer I had a good, strong colony in 2 10-frame brood-chambers, one on top of the other. I moved one hive with the brood-chamber and 2-3 of the bees to another place, contracted the entrance, but did not close it, and put a queen in a cage on the top-bars. A few days later I raised the cover and removed the empty cage. I reason that the old bees would return to the old stand and the young bees would accept the new queen. I was so sure that the plan would work that I did not open the hive again for 2 or 3 weeks. Then I found it queenless, and, as I had no queen, I put it back on top of the other hive, and it is still there.

Now, when the weather becomes settled, I want to separate those 2 hives and make 2 colonies. How shall I do it?

I understand that under favorable circumstances the queenless part should rear a queen of their own, but they did not do it. Anyway it would take too long. ILLINOIS.

ANSWER.—Introducing queens and rearing queens are among the uncertain things. Even the most experienced have occasional failures. On the face of it, one would judge your queen ought to have been accepted. And if not, a young queen ought to have been reared. Perhaps a young queen was reared and lost. You can hardly do any better than to try the same plan again. The next 20 times it may be a success. If you wish to have the bees rear their own queen, you might vary the plan a little. At the beginning of swarming time, take two of the poorest frames of brood with the queen and adhering bees, and put them in a hive on a new stand. A week later there ought to be the best kind of queen-cells started in the queenless colony. Now let the two hives swap places, leaving, however, only one frame of brood with the queen, and that the poorest. That gives you all the flying force with the queen on the old stand—practically a shaken swarm, ready for fine super work, and the queenless part, being suddenly weakened by the loss of its flying force, ought to give up any notion of swarming, which it would have if not thus weakened.

Loss of Bees in Winter.

Out of 23 colonies of bees I have lost 12 this winter. They are in double-walled hives ¼-inch air-space. Some of the frames are 11½ inches deep, and some 9⅞. Last fall I took some ½-inch and ⅞-inch boards and made what I called a cap just large enough to cover the frames on top. I had ¼-inch bee-space so that the bees could crawl over the top-bars from one frame to the other. Of course they glued that down air-tight. They died in a cluster, and the combs were damp and mostly covered with green and yellow mold. The entrance is ⅜ by 6 inches, and I had that space reduced down most of the time to 2 to 4 inches. Did I fix them too warm? I think now that I missed it by not having an air-hole up through that cover. Of course, the hive cap went on over that cover. What did I do wrong, or what killed the bees? The other ones, fixed the same way, seem all right at present. They all left enough honey to have run them until clover time, and they were all left on the summer stands. I also had the hives all covered with tar-paper to keep the hives dry, and had boards to lean up over the entrance when it snowed or was bad, cold, windy weather.

I am an old Union soldier and not able to work any more, so I thought I would try to keep a few bees to help out a little. This is my third year with them, and I have lots to learn yet. I take the American Bee Journal, and also have "Forty Years Among the Bees," by Dr. C. C. Miller, and Root's "A B C" book, and "Langstroth on the Honey-Bee," by Dadant.

The outlook for white clover at the present time here is not very bright. INDIANA.

ANSWER.—It is not always easy for a coroner's jury to decide the cause of death, especially at a long distance from the dead body. It can only be guessing, at best. It is not entirely clear from your description just what was on top. It seems there was a sealed board cover with a ¼-inch space over the top-bars, but it is not certain whether there was the proper packing over that sealed cover. Some sort of packing should have been over that sealed cover to keep it warm enough so moisture would not settle upon it to drip down upon the bees. Possibly such packing was present. The 6-inch entrance was closed down to 2 to 4 inches most of the time. An entrance ⅜ x 2 inches, making only ¾ of a square inch, may not have furnished sufficient air for a strong colony, especially if that entrance was at any time clogged by dead bees. If any one has a better guess, I yield the floor.

Signs of Queenlessness — Entrance Ventilation.

1. What is the best sign of a queenless colony in the spring?

2. In Gleanings of November 1, 1908, on page 1327, under the heading, "An Adjustable Storm Door," I do not fully understand how ventilation is secured.

3. And do those who winter bees on the summer stands need to scrape out the dead bees? WISCONSIN.

ANSWERS.—1. The best sign is to find no brood present when all other colonies have started brood. Even by looking at the outside, you may be suspicious if you find the bees of a colony carrying no pollen, or very little pellets, when other colonies are carrying in great loads of it.

2. I do not quite see what your difficulty is. The ventilation is just the same as at any entrance, the sliding door merely making the entrance larger or smaller. Not many bee-keepers, probably, would want to take the pains to be constantly changing the size of the entrance. If they should, the old Langstroth entrance-blocks are simpler. Merely two triangular blocks, one side of each block perhaps 3 inches, another side longer, and the third side of such size that the two blocks close the entrance all but half an inch.

3. It is better, of course, to have the dead bees cleaned out. With the usual shallow entrance, and shallow space under bottom-bars, it may be absolutely necessary; for the entrance, otherwise, may become entirely clogged with dead bees. With a deeper space under the bottom-bars, and entrance at the upper part of the space, cleaning out the dead bees is not so important.

A Dozen Interesting Questions.

1. I have 2 colonies of bees. I would like to increase 2 or 3. Would you advise me to make artificial swarms, or wait for natural swarms?

2. Can I do this and get a small crop of honey, by using full sheets of foundation both below and above?

3. Does it pay to feed bees sugar syrup before fruit-bloom?

4. Will bees work as well for a beginner as an expert bee-keeper, if properly cared for?

5. What is the average crop of honey from a colony the first season?

6. If a bee-keeper's cost overruns the profit, which is to be introduced—a new bee-keeper or new queens?

7. Is fruit-bloom a good time to make artificial swarms?

8. How far apart should a "shook" swarm be set from the parent hive?

9. I have a nice hollow log that I would like to put bees in for amusement. Is it best to lay it down or stand it up?

10. Would they be likely to work in a super if set on the end?

11. If I run a swarm into another colony, is there any certainty which queen will be killed?

12. Does it pay to buy queens for "shook" swarms when you have good stock to rear from? VIRGINIA.

ANSWERS.—1. If you have not bad much experience it may be as well for you to have natural swarming.

2. Yes, you ought to be able in a good season to get quite a crop of honey if you get a swarm from each colony and have no afterswarms.

3. Yes, if there is any danger of bees running short of stores.

4. Yes, with the same care there will be no difference in results.

5. I don't know. It may run anywhere from nothing up to 200 pounds or more.

6. It may be either way; it may be neither way. The best bee-keeper with the best queen may make a failure in a bad location or in a bad year.

7. No; it's better to wait till the usual time for natural swarms.

8. A shaken swarm is left on the old stand.

9. Saw off square at each end and set it on end.

10. Yes.

11. No.

12. With shaken swarms there is generally no change of queens, the old queen being left with the bees. In general it does not pay to buy queens, unless you expect to improve your stock by it. Still, M. A. Gill, one of our best bee-keepers thinks it pays him to buy queens rather than to rear them.

Moths in Combs—Banats or Carniolans?

1. I have a few colonies of black bees in movable-frame hives, and the moth-worms are getting into some of them. If I should introduce pure Italian blood of the 3-band type, would it kill out and keep out the moth?

2. How would the Banats or Carniolans be for keeping out the moth, or would a cross between one of the above-named bees and the Italians be better? CALIFORNIA.

ANSWERS.—1. Yes, even a little Italian blood worked in will help to keep the moth at bay. Even blacks will hold their own pretty well, if strong, but Italians, even when quite weak, will conquer the moth.

2. I'm not sure about it, but I think either of these bloods, or their cross with Italians, would fight moths better than blacks.

Profits on Bees and Chickens—When White Clover Blooms.

1. I own a ¼ share in a farm valued at $12,000. Do you think I could buy the rest of it and pay out on 200 colonies of bees and 500 chickens? The rent of the place will pay the interest and taxes.

2. What time of the year does white clover bloom in this State? ILLINOIS.

ANSWERS.—1. I don't know. Doubtful. Of course, however, one might clear $9,000 on 200 colonies of bees and 200 chickens, but he would need to be pretty well up in bees and chickens, and to live quite a few years.

2. In the northern tier of counties it opens its first blossoms in the last of May or first of June, and earlier as you go south.

Bees Deserting Their Own Hives.

I had 32 colonies of bees, and I have lost 5 of them. They will swarm and come out of their own hive and settle on the outside of some of the other hives, and leave their own hive empty, with lots of honey in them. When they settle on the other hives, it causes them to get into the fight and kill almost all of them. What causes the bees to do this? KENTUCKY.

ANSWERS.—Bees sometimes seem to have a mania for deserting their hives in spring and trying to force their way into other hives, and it isn't easy to say just why. Some think because they are weak and discouraged. Some think because they have started a lot of brood, and then the old bees have died off so rapidly that enough are not left to cover the brood. In any cases the advice given is to have only strong colonies in the fall. This is sound advice on general principles, even if there should be some absconding the following spring in spite of strong colonies.

Controlling Swarming—What Ails the Queen?

1. I have about 10 good colonies of bees, and have a word to say that might interest some of the readers of the American Bee Journal. It is that this year is the best that ever has been known for honey unless it changes very much before midsummer. I put my first supers on February 29, 1908—the earliest I ever knew that bees would store honey. Today I put the second ones on some of the

hives. Do you not think it is rather early for so much honey? The prune blossoms are just out this week, and where they get the honey from is more than I can tell, with very few wild flowers yet. Sage will not be in bloom until May. At this rate they ought to store a large amount of honey. Is there any other way to control swarms besides cutting out queen-cells?

2. I have one colony that was hived late last year. I looked at it today. I thought it was queenless, as there were scarcely any bees at work, but I found a large, black-looking thing. After going all through I found her on the ground and she could not fly; and hardly walk. The colony has plenty of honey and hardly any brood, so I got a frame of good brood from another strong colony and put it in place of some empty. What is the matter with this queen? Why should she have lots of feed and no brood to hatch more young bees? What shall I do with her and her friends? CALIFORNIA.

ANSWERS.—1. If you are running for extracted honey, here is a plan that with some is quite successful in preventing swarming. Just before there is danger of swarming, put the queen with frames of foundation or empty combs in the lower story, and all the brood in the second story, with an excluder between the 2 stories. No matter in which story the bees are. If running for comb honey, instead of putting the brood in the second story, take it away entirely, giving it to weak colonies or making a pile of it to make a new colony. It may not be out of place to say that you can not prevent swarming by merely cutting out queen-cells.

2. It may be the queen is old. Sometimes there are poor queens which are not old, and no one can tell just why they are poor. Better kill the poor queen and give the colony a better one. Likely, however, it will be better to break the colony, distributing the combs with adhering bees among other colonies.

Redwood as Hive-Lumber.

Will redwood, if used in making bee-hives, cause the honey to partake of the flavor of that wood, if a coating of linseed oil is used on the inside? That is the cheapest lumber here. CALIFORNIA.

ANSWERS.—I think redwood is used a good deal for hives, and I never heard of its harming the honey at all. I don't think you need any inside coating. The bees can do their own coating.

Queen and Drone Excluding Bottom-Slats.

I am a beginner in bee-keeping, and my aim is to produce comb honey. I would like to know if it would not be a good idea to make the bottom slats of the first supers on the hive, queen and drone excluding. How far apart should the bottom slats be in order to be queen and drone excluding? By this plan I would save the expense of buying honey-boards. MINNESOTA.

ANSWER.—Don't think for a minute of trying such a plan. The space to exclude a queen is about 1-6 of an inch; but it must be exceedingly exact. A very little more will let a queen through, and a very little less will bar a worker. Besides, with full sheets of worker-foundation in your sections, the queen will very seldom go up. I've produced tons of section honey without using any excluders.

An Octette of Questions.

1. Did you ever try 2 queens in one hive?

2. Why is the T-super better than others, and why are they so short?

3. Are the drones from one queen any better than from another?

4. How could I get the queen that I want, to lay drone-eggs? If I give drone-comb they rear workers just the same.

5. Why is it that the more honey the bees eat the warmer it gets?

6. Do the bees ever kill the queen after her wings are clipped?

7. If the queen be clipped and they swarm and the queen is lost, will they not swarm again as often as they have queen-cells left?

8. Does it pay to have full starters in supers? OREGON.

ANSWERS.—1. Yes; a good many times I've had colonies with 2 queens, mother and daughter, and a few times I've put 2 queens, that were not related in the same hive, but they were old queens.

2. For several reasons; easier to fill, easier to empty, easier to clean the sections, etc. It is shorter than other supers because simpler, with no frames or holders to make it longer. That gives it the advantage that when desired a space for ventilation can be left at the back end.

3. Sure; just as much difference in drones as in queens.

4. A little before harvest time, strengthen the colony by giving it additional sealed brood from other colonies, and if there is drone-comb in the brood-nest she'll lay in it.

5. For the same reason that the more fuel you put in a stove the hotter the fire. Although it is slower, the combustion of honey in the bees is much the same as combustion of fuel in the stove.

6. In very rare cases. But they might kill her just the same if you caught her and put her back without clipping her.

7. Yes, in about 8 days afterswarming will begin, just as if the queen had not been lost; only the colony being stronger the after-swarming will be more certain.

8. Yes; for many years I've used them along with many others, and wouldn't think of doing otherwise.

Reversible Bottom-Board—Decoy Hives, Etc.

1. In July of the previous summer we secured a swarm of bees in a barrel. In the autumn a neighbor about half a mile from these bees began to make cane syrup. I did not notice that the bees came to bother at the syrup cookery then. But, anyway, if I have one, 2 or more full colonies, is it probable that the bees then will come and bother at the syrup cookery?

2. If one uses the reversible bottom-board, one side making a narrow entrance, for winter use, and the other side a wide entrance, for summer use, how can there then in both instances be a proper bee-space between bottom-board and bottom-bars of the frames?

3. How do the bees enter from the bottom-board to the brood-frames? Do they only crawl, or do they both crawl and fly, as the case may be?

4. I believe somebody said that bees never fly within a dark apartment. Is that so?

5. Is it somewhat bad to reverse the position of a brood-frame in the hive, so that the end having been toward the front, thereafter will be toward the rear?

6. How would it be to use insect powder, and a little "insect powder gun" for the sake of keeping extracting-frames—either those full of honey, or the empty combs—free from moth and wax-worms?

7. Regarding decoy hives, would they not be much more inviting to the bees if there were also foundation-starters, or one of the frames having a full sheet of foundation. WISCONSIN.

ANSWERS.—1. Yes, there is danger.

2. Usually it is the other way, the shallow space being used in summer, and the deep space in winter, a deeper space being desired in winter than in summer. However, I use a 2-inch space summer and winter, in summer putting in a bottom-rack to prevent building down.

3. They do both ways, if the space is deep enough.

4. I don't know; I don't believe they often fly in the dark.

5. It isn't likely to make any difference.

6. I doubt if it would work.

7. Foundation would not be likely to prove attractive to the bees, but the old combs would.

Increase Not Wanted—Frames and Splints—Italianizing Natural Swarms.

1. I don't want to increase the number of my colonies of bees any more than I will have to by natural swarming, as I will not have the time or money to take care of them. If I get a new queen, could I not do some requeening instead of working for increase?

2. I had thought of working into your kind of frames. Would not the metal-spaced frame (Hoffman) with the bottom bar in 2 pieces to receive the foundation, work nearly as well, by using your splints? The bottom-bar of the Hoffman frame I suppose would have to be made heavier.

3. I have finished reading your book. When I came to Italianizing natural swarms I thought that would be just the thing for a farmer like myself, but, come to think of it, our best colonies do not always swarm first, and sometimes not at all. B, C, or D might be the first to swarm. In other words the bees might take a fool notion not to carry out their part of the program. I suppose A might be stimulated enough to make everything work out nearly, if not quite, up to the program. OHIO.

ANSWERS.—1. Certainly. You can introduce a queen of the new stock into any one of your colonies. Also, when a colony swarms, any time within a week you can destroy all the queen-cells in the mother colony and give it a queen-cell of the new stock.

2. You can use foundation-splints in any kind of a frame. Neither is it necessary to have the bottom-bar in 2 pieces, nor to have it heavy. If the bottom-bar is in one piece, let the foundation come down to it, being cut true so as to make a close fit, and then run melted wax along the edge of the foundation so as to fasten it to the center of the bottom-bar.

3. Now look here, you're not going to let the bees beat you in a little thing like that, are you? Suppose you have a colony with your best queen, and it is the weakest one in the yard, and yet you want it to swarm first. Don't go to stimulating. Just give it a frame of well sealed brood perhaps 2 weeks or longer before there's any danger of any colony swarming. In a day or two you can give it another frame or two, and again after another interval, and keep on until it is the strongest colony you have. Take the brood from the strongest colonies, and that will stop them from swarming, while it will turn your best colony toward swarming. You can also help matters after you have the hive full of brood, by taking away combs that are not well filled with brood, or that have young brood unsealed, and swapping them for combs that have mostly sealed brood. Thus weakening your strongest of the other colonies, and strengthening this one colony, why should it not swarm first? Then as often as it swarmed, you could each time set it in place of a strong colony, thus strengthening it to swarm again, and each time it swarmed setting it again in place of another colony, thus keeping it strong for swarming so long as its queen-cells last.

Why So Small a Swarm?

1. I got a queen July 18, 1908. I gave her to a weak colony and on August 30 I changed her to a stronger colony. This last colony showed quite a few yellow bees last fall. I have been watching them pretty closely to see the black bees disappear, but to my surprise the yellow bees began to disappear. I opened the hive yesterday and found the frames full of brood, but all black bees. What became of the yellow queen?

2. Why were the bees so black? They don't look like hybrids.

3. After I looked in the hive yesterday (April 25), say 10 a. m., a small swarm came out. Maybe there was a pint of them. They flew in the air pretty badly scattered. I followed them. They went to a neighbor's about a quarter of a mile away, who had bees, and they mixed with his bees. I suppose they killed them. They were in front of one of his hives fighting, and some were in the air. What caused them to cast such a small swarm? KANSAS.

ANSWERS—1. You don't say whether you gave the queen without any bees to the stronger colony, or united the weak colony, queen and all, with the stronger. I suspect the latter, and that there never were any yellow bees in the stronger colony except those you gave with the queen; and the queen was killed as soon as given.

2. The probability is that there was a black queen in the hive at the time you gave the yellow queen, or else the bees reared a young black queen, whose workers would be black and not hybrid.

3. You don't say what was left in the hive, whether all the bees went or not. If all or most of the bees went, it was a case of discouraged bees deserting their hive, not an unusual thing in spring.

Queen-Rearing—Reversible Bottom-Boards.

1. If I put an empty hive-body under a colony of bees to give them plenty of room, and then when I want to, reduce to one hive, if I should put one hive-body on a new stand, would the colony without a queen rear one for itself? If I understand it right, bees can rear a queen if they have all stages of brood to choose from.

2. I have bottom-boards that can be put upside down and there will be a larger en-

trance. When should I change them? I have them on the smallest way now.

IOWA.

ANSWERS.—1. Yes, if at any time you put on a new stand one or more frames of brood in all stages with adhering bees, the bees will rear a queen. But if too weak they may desert. Even if quite strong, you may not get a good queen, for there will be no field-bees, no honey coming in, the bees will feel discouraged, and a discouraged lot of bees is not the thing to rear a first-class queen. If you vary the matter a little, you will have a good queen. When the colony is strong and honey is yielding well, take 2 frames of brood with the queen and adhering bees, and put them in a hive on a new stand. The bees in the old hive will be in the best condition to start good cells. About a week after taking the queen away, take away the hive with the queen, and put on the stand a story filled with brood and bees (or as many frames as you like), of course taking queen-cells with them, from the old hive. Put the queen with her 2 frames of brood back in the old hive, and the bees will do the rest.

2. The shallow part of the bottom-board should be put uppermost as soon as honey begins to yield, or even as soon as bees fly in spring, and reversed again after the fall harvest is over. The deep space is for advantage in wintering.

Reports and Experiences

Tough Spring on Bees.

This has been a tough spring on bees here. The bees have got almost nothing. The peach-bloom is just passing with not much to the bees. Today it is windy and cold. No swarms yet.

R. B. PERRY.

Greenfield, Tenn., April 12.

Bees Wintered Well.

Out of 125 colonies and nuclei of bees put into the bee-cellar last fall, 124 were taken out alive and in good shape this spring. The 125th one starved through the carelessness of their keeper. Yet it is said that the golden Italians do not winter well!

G. M. DOOLITTLE.

Borodino, N. Y., April 11.

Bees Wintered Well.

Bees have wintered well. They have not gathered much honey yet. It has been so cold that the fruit has not bloomed yet.

I wish that the next meeting of the National Bee-Keepers' Association would be held at Kansas City, so that the members who live in Kansas could attend.

J. L. YOUNG.

Manhattan, Kans., April 20.

No Loss in Wintering.

Bees came out of the cellar in good order—50 colonies without any loss. I run for comb honey altogether. I have my hives and foundation, everything but sections. This makes 78 years without any vacation, but I don't keep so many as I formerly have kept.

JOHN CLINE.

Darlington, Wis., April 24.

Bees Wintered All Right.

I put my bees into the cellar October 15, 1908, and took them out to fly March 31, 1909, at which time they appeared to be all right, although the temperature in the cellar stayed at about 35 degrees, Fahrenheit, all winter. It was very damp and some of the combs were a little moldy.

DAVID E. DOBBS.

Indus, Minn., April 16.

"Taming," Bees, Etc.

After reading the American Bee Journal, I am struck forcibly by the difference in my knowledge of bees now from when I tried to handle bees before reading a word about them. In 1883 I first tried my hand at "taming" bees. I put on a heavy pair of fur gloves, took a pail of water and molasses, equal parts, and I sprinkled the hive or box, then sprinkled the swarm like a woman sprinkles clothes to iron, etc., but before I got my bees "put," I had a quart of them crawling in the fur of the gloves, all stinging and roaring. I put the colony in a frame-building to winter. In the course of a few months I went back and found most of the bees in a window, dead, and the hive empty. I would know better now.

I would like to see a law passed to compell a man to pass an examination before being allowed to keep bees.

L. W. BENSON.

Liberty, Nebr.

Bad Spring Weather.

We have had some bad weather here since the evening of April 28. It snowed about 5 or 6 inches, then a long warm rain for a few days, which melted the snow. This made a big flood. We have had just a day now and then that the bees could fly. Saturday and Sunday were very bad. I have 21 colonies of bees. They wintered well—just one weak one. They have been gathering some pollen.

RALPH E. STEVENS.

Scio, N. Y., May 3.

Cold and Backward Spring.

Though the bees wintered splendidly, and are in fair condition still, there have been periods of long duration this spring with icy winds. I never saw the old bees taken away so rapidly before. Searching for pollen they get chilled never to return. Tonight, as I write, the ground is white with 2 inches or so of snow, a steady fall of snow having been in progress some 3 hours.

ALLEN LATHAM.

Norwichtown, Conn., April 29.

Swarms on April 6.

I have 24 colonies of fine Italian and hybrid bees in 10-frame Jumbo, double-wall hives. I have had 2 large swarms—one on April 6 and the other April 11. Other hives are running over with bees and will swarm soon. White clover is beginning to bloom. Fruit-bloom is almost gone. Then comes blackberry bloom, poplar, etc., and cotton later.

J. W. LEWIS.

Charlotte, N. C., April 13.

Likes This Journal—Wintered Well.

Out of 8 to 10 periodicals that come into my home, the American Bee Journal to me is the most interesting. I have taken it but one year, but so tightly has it gripped my interest, that I belive I am safe in saying I will continue on its list of subscribers as long as I live and keep bees.

I am practically a beginner with bees, but have 23 colonies which have been wintered on the summer stands without the loss of a colony, and what is still more remarkable, without the loss of one queen.

GEORGE W. FULLER.

Cattaraugus, N. Y., April 1.

Moving Bees a Long Distance.

The moving season is doubtless well over. All have been seeking the Eldorado, and have yet to find that they have reached the desired place. I am one of the movers, having come to Southern Illinois from Central Louisiana. I stopped short of Eldorado by 8 miles, and so I suppose that I may expect some disappointments and failures.

My move up here was a disappointment so far as the manner in which my car was knocked and brought up short with a jerk at some places, was concerned. It was a failure as to my success in shipping my bees. My experience may be helpful to others, and so I will give it to you.

I wired the bees in with galvanized screening, nailing a wooden strip the length of the front of the hive to the body, and one on the alighting-board. I used hive staples to fasten the bottom to the bodies, driving them in full depth, and so set that the staples if continued would form the sides of a triangle. This held the bottoms rigid and all right. I also used staples to fasten supers and tops to the bodies until my store was all used.

Then I went to the tinner and bought some light-gauge galvanized strips, one by 6 inches. I nailed the remainder of the hives with these, using one-inch brood-frame nails.

I placed all of the hives in the car with the frames running with the length of the car, excepting one hive, which was crosswise. This one exception was in the best condition upon my arrival here. Many of the hives were fairly well stored with honey and plenty of bees. Some were well stocked with bees.

Now the result: The hives having ⅞-inch entrance and the most honey fared worst. The bees clogged the entrance and suffocated. The heavy handling on the car broke down all of the full combs, crushing and drowning a great many bees. The hives having the least bees and stores came through all right. Every frame that was not wired had the combs broken. All frames which had been wired on the diagonal plan were also, and only one frame that had been wired in the standard method was broken.

I estimate that I lost at least two-thirds of my bees. Some hives which had been full stapled were broken open. These hives, of course, lost all of the bees by straying on the road.

Now, if I were going to make another long move, I would use staples only on the bottoms, and galvanized strips for the supers and covers. I would extract all of the honey, and place candy in two full frames for the bees to feed upon. I would have every frame wired in the standard way (I shall not use the diagonal wire plan again), and I would sell my bees before starting if I could get half of their value. This I could not do. I could have very easily given them away, or what is next to it, by accepting about ⅛ their value. This I would not do, hence this experience.

I trust that this may help some brother who feels that he must move.

H. F. HITCH.

Harrisburg, Ill., April 16.

Eastern New York Convention.

The Eastern New York Bee-Keepers' Association will hold its second semi-annual convention at the Court House, in Catskill, N. Y., Saturday, May 15, 1909. Sessions at 10:30 a. m., and 1:30 p. m. Bee-keepers' headquarters at Bell's Commercial Hotel.

We desire the attendance of all who are interested, as there will be special matters for attention. We will also have discussion on seasonable topics, question-box, etc. N. D. West and other inspectors are expected to be present. Come and get the benefits of co-operation, some of which are reduced prices on bee-supplies and periodicals. Ladies especially invited.

D. A. FRAZIER, *Sec.*

440 Second Ave., Albany, N. Y.

Safe Introduction of Queens—Wiring Frames, Etc.

In answer to Louis Macey (page 151) there is a way to have a queen lay *during* her introduction, and a very good way, too.

Take a piece of wire screen about 5x5 inches, ravel out all around the edges for about one inch, turn the ravelled ends down at right angles to form a sort of box. Now get a comb of hatching-brood, shake the bees off and bring it in the house, and select a spot where the cage will cover some hatching brood and also some honey. You must have enough honey to last the queen and hatching bees several days. An old, tough comb is best, as the bees do not gnaw around the cage so readily.

Drop the queen on just where you want her and press the wire points into the comb till the points come to the mid-rib of the comb, and replace the comb in the hive. The hatching bees will never harm the queen, and if your work is well done so that the outside bees can not get in she will soon be laying. In 4 or 5 days, if all is well, and bees are not offering to molest her through the screen, remove the screen, and after noting the behavior of the bees to her, close the hive up and let alone a few days, as too much tinkering often causes the bees to attack their queen.

Now a word to Wm. M. Whitney and "Bachelor Bee-Keeper," in regard to wiring:

I would not think of saying that Mr. Whitney's plan is "an absolute failure," for no doubt he makes it work, but I failed utterly, as the combs would be wavy. My plan is to use 3 horizontal wires in the Hoffman frames, and I get beautiful combs. I put the wire in fairly tight and when I pick a wired frame up to put in foundation, I put my left hand against all the wires at once and press in such a way that the upper wire is slightly slacked, the middle one a little more out and the bottom one still more; this is to allow for stretching of the foundation. As I imbed the wires, I place them so they "sag up" instead of down, and then the foundation never buckles. I use Dadant's thin-brood foundation, and it never stretches enough to show on the finished combs. I extract all my honey, and sometimes have as much as 4 tons, and am not at all careful with the combs, but the 3 slack wires always hold them in.

In regard to the Illinois bee-keepers who are objecting to the foul-brood law, if Mr. Stone is positive that their bees have foul brood, would it be any injustice to them, or would it place him liable in any way, if he gave their names? As it stands, it reflects on *all* bee-men in north or south of the State, no matter how clean their apiaries may be, or how careful they may be about spreading disease. Many bee-keepers all over the country, when they order queens, would naturally steer clear of these two neighborhoods, and as there are several honest queen-breeders in this State, it reflects injustice on all alike.

S. F. Trego.

Swedona, Ill.

Wintering Bees in a Warm Room.

Wintering in a warm room, bees fly every day in winter. June 4, 1908, a colony swarmed. Ten days after swarming, they were looked over and 7 queen-cells found. Four were cut out and one left. One frame containing 2 queen-cells, well filled with brood and young bees, was removed and placed in an observation hive, to form a single-frame colony. On June 19, one queen hatched, and began laying June 30. The bees of the original brood had become somewhat reduced when the young brood began hatching on July 20. Since then the colony has been very strong. August 22 I began feeding sugar syrup for winter stores, 2 parts sugar to one of water. They filled the frame about 3-4 full by September 1, when feeding was discontinued. October 29 they were brought inside and placed on a table, with the entrance of the hive opening into a flying-cage.

The cage is 2 feet square, made of 3-4-inch pine strips for the frame-work, covered with wire netting on all sides, with a door half the size of one side, for the purpose of cleaning the cage, and setting in potted plants. Blooming plants, such as mignonette, cineraria, etc., have been kept in the cage at all times, also fresh water. After 4 or 5 days the bees appeared to have become accustomed to confinement, and every day during the winter they would come out into the cage, oftentimes flying about and returning to the hive without alighting. The temperature of the room has ranged from 50 to 70 degrees.

On January 26, the queen began laying, and continued until a space of 5 inches in diameter on each side of the frame was filled with brood.

February 8, rye flour was given them. They did not readily take this from a dish, but when sprinkled on the flowers, they would take the flour as readily as the original pollen. At this time winter stores were getting low, and the queen stopped laying.

March 27, I began feeding honey instead of sugar syrup. This will be continued until the outside supply is available. The queen began laying again as soon as feeding was commenced.

One very interesting feature which the flying-cage has made possible has been the accurate noting of the number of bees that have died from day to day during their confinement. During November, 93 died; in December, 60; in January, 154; in February, 201; in March, 361. April has averaged about the same as in February thus far, while the hatching of the new brood appears to have kept the total number in the colony nearly uniform.

Since the warm weather, the young bees appear more restless, and try to get outside. I shall let them pass out through the cage soon.

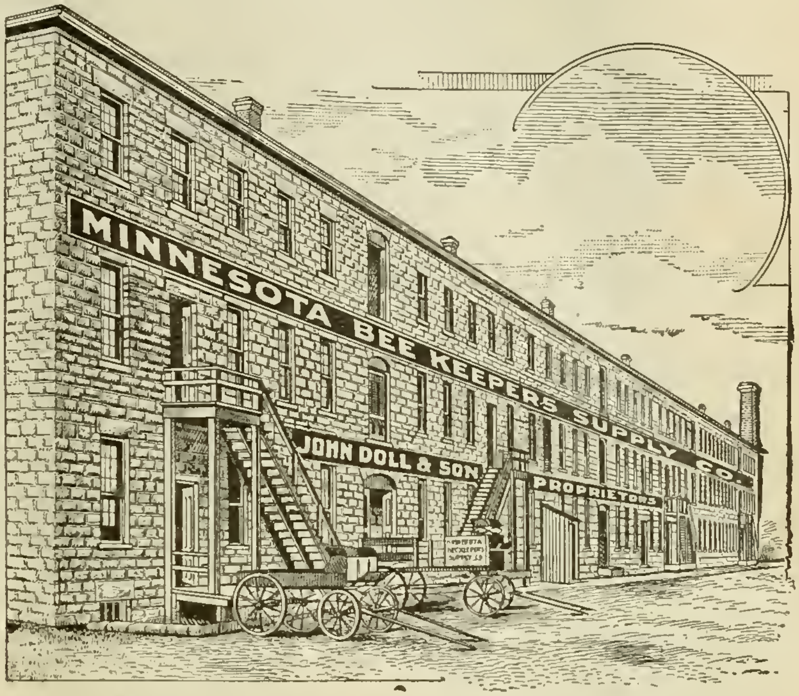
G. T. Whitten.

School of Horticulture,
Hartford, Conn., April 8.

MILLER AUTOMATIC DECAPPERS
For all Frames and Sections.
$5 to $35.
Send for descriptive Catalog.
APICULTURAL MANUFACTURING CO.,
Providence, R. I.

Bee-Keeper Visits Manufacturers.

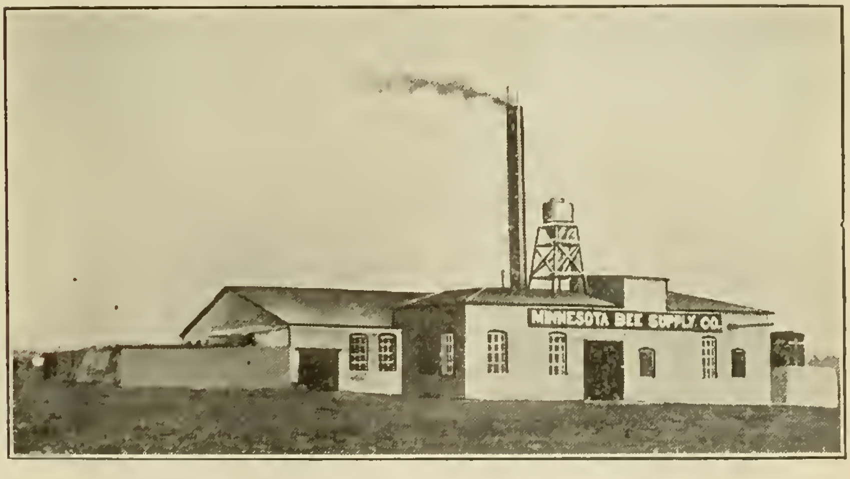
The production and marketing of honey has always been one of my hobbies. I derive a great deal of pleasure in caring for my bees, and the busy workers net me a nice income each season. During the past 10 years I have used a good many bee-supplies for the proper care of my bees and the marketing of their honey. The majority of these supplies I have purchased from the Minnesota Bee Supply Co., 152 Nicollet Island, Minneapolis, Minn. Having always had a desire to go through a plant of this kind, I called on this firm while on a visit for a few days in Minneapolis.


MINNESOTA BEE KEEPERS SUPPLY CO.
JOHN DOLL & SON
PROPRIETORS

Minneapolis Plant of the Minnesota Bee-Supply Co.

This concern has a modern 3-story factory which is situated on Nicollet Island and the horse-power for operating its machinery is furnished by the water of the famous St. Anthony Falls. Their factory, including the warehouses, gives them about 15,000 feet of floor space for the manufacture and storing of goods. The warehouses are arranged so as to store the different kinds of bee-supplies in proper order so they can be easily handled for prompt shipments. The lumber yards are situated in the rear of the plant, and run along the banks of the Mississippi River. The whirl of the modern machinery which turns out sections and other bee-supplies in large quantities, and the systematic handling of the material by the experienced employees, gave me the impression that this plant was a very busy bee-hive.

The next day I took the train and paid a visit to their new branch factory at Buffalo, Minn., which is about 37 miles from Minneapolis. Built of brick and cement, this plant is practically fire-proof, and the floor-space, including the additions, is about 100 feet wide by 140 feet long. At this factory the lumber is cut direct from the logs,, which is then run into the two large kilns to dry. The crude material when properly dried goes into the factory, and with the exception of about 12 operations by hand, the modern machinery turns out the finished product. In the yards there is at present about 1½ million feet of logs which is to be worked into bee-keepers' supplies and berry-boxes. The many different modern machines for the manufacture of the various supplies; the Corliss engine which develops 135 horse-power, the 2 steam boilers; the 150 feet of shafting, the miniature railroad and cars for transporting material to the different parts of the factory and yards; the electric light



Buffalo, Minn., Branch Plant of the Minnesota Bee-Supply Co.

plant for furnishing light for the factory and yards; the side-tracks from the railroad, and the perfect arrangement of the plant as a whole, established the fact in my mind that this concern has the facilities for turning out first-class goods in the shortest possible time.

Employing 60 men, the plants have a capacity of about 60,000 sections, 2,000 shipping-cases, and 300 hives, per day, as well as numerous other lines of supplies, berry-boxes and crates. Car-load orders are filled at either plant, but orders for smaller quantities are filled from the warehouses in Minneapolis. The facilities for prompt shipment over the many railroads, and the advantages in purchasing lumber from the great lumbering center, makes Minneapolis an ideal spot for the home of a bee-supply and berry-box manufacturing industry. The Minnesota Bee-Supply Co., are to be congratulated on their equipment, and the facilities at their disposal to supply the needs of the bee-keeper. Their goods are of the highest standard and aside from this fact, they are entitled to the patronage of the purchasing public for the many courtesies extended to their customers at all times.

PROGRESSIVE BEE-KEEPER.

* * *

W. H. PUTNAM SAWING BASSWOOD BOLTS FOR SECTIONS AT RIVER FALLS, WIS.

Putnam's Bee-Supply Factory.

We show our readers herewith a picture of one of the familiar scenes at the bee-supply factory of W. H. Putnam, of River Falls, Wis. The question of sections is one that concerns every honey-producer. Basswood is about the only material that has proven entirely satisfactory for making sections. We are informed that there is still a considerable quantity of native basswood in the vicinity of River Falls, and that Mr. Putnam is installing a new equipment for the manufacture of better and more perfect sections than are usually found on the market.

We remember Mr. W. H. Putnam as one of the jolly crowd that went in the special car to attend the •National convention at San Antonio, Tex., in November, 1906. He has developed some skill as a public demonstrator with live bees. His colonies have taken first premium at a number of State Fairs, and his method of dealing direct with the consumer, is, in a way, an innovation from the established custom. We have met Mr. Putnam personally several times, and take pleasure in calling attention to his growing and deserving institution. Its advertisement will be found on another page.

Tennessee-Bred Queens

37 Years Experience, breed 3-band Italians only.

	November 1st to July 1st			July 1st to Nov. 1st		
	1	6	12	1	6	12
Untested	$1.00	$5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select Untested	1.25	6.50	12.00	1.00	5.00	9.00
Tested	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested	2.50	13.50	25.00	2.00	10.00	18.00

Breeders $4.00. Add twenty percent for queens to be exported.

Nuclei, without queens: 1-frame, $2.50; 2-frame, $3.50; 3-frame, $4.50. 1 Full Colony, 8-frame, $9.00.

Select the queen wanted and add to the above prices.

NOTE

I have transferred to my son, Benj. G. Davis, my straight 5-band and Golden department, and in order to receive the promptest attention, all correspondence for these should be sent direct to him. He practically grew up in my queen yards, rears queens by my methods, has had charge of this department for years, and understands his business.

Prices same as above except Breeders, which are $4.00 to $10.00. No disease.

JOHN M. DAVIS, Spring Hill, Tennessee, U. S. A.

"A Year's Work in an Out-Apiary"

This is the title of a 60-page, paper-bound book, 6x9 inches in size, written by G. M. Doolittle, of New York State, who is so well known to our readers. It tells how an average of 114½ pounds of comb honey per colony was secured in a poor season. Mr. Doolittle's over 35-years' experience in producing comb honey gives the weight of authority to what he says on the subject of bees and bee-keeping. The book is sent postpaid for 50 cents; or with the American Bee Journal one year— both for $1.10. Send all orders to the American Bee Journal, 118 W. Jackson Blvd., Chicago, Ill.

* * *

Books for Bee-Keepers

Have you a good bee-book? Many bee-keepers do not have. And that is where they make a big mistake. A bee-paper cannot take the place of a good bee-book. The paper is a splendid thing to read *in connection with the book.* On another page we make some generous clubbing offers of bee-books with the American Bee Journal. Why not order a book when renewing your subscription? You will find the book and the Journal a great combination. You should have both of them.

Langstroth on the Honey-Bee

Revised by Dadant—Latest Edition

This is one of the standard books on bee-culture, and ought to be in the library of every bee-keeper. It is bound substantially in cloth and contains nearly 600 pages, being revised by that large, practical bee-keeper, so well-known to all the readers of the American Bee Journal—Mr. C. P. Dadant. Each subject is clearly and thoroughly explained, so that by following the instructions of this book one cannot fail to be wonderfully helped on the way to success with bees.

The book we mail for $1.20, or club it with the American Bee Journal for one year—both for $1.70 or, we will mail it as a premium for sending us **FIVE NEW** subscribers to the Bee Journal for one year, with $3.75.

This is a splendid chance to get a grand bee-book for a very little money or work. Address,

GEORGE W. YORK & CO.,
118 W. Jackson Blvd., CHICAGO, ILL.

UNCAP
your combs with
MILLER AUTOMATIC DECAPPERS
For Frames and Sections.
$5 to $35. Free Catalog.
APICULTURAL MANUFACTURING CO.,
Providence, R. I.

DOOLITTLE & CLARK

Have just taken from their bee-cellars some of the finest Italian breeders ever seen. Prices, $2.50, $5.00, and $10.00. Ready for delivery May 1st. 5Atf

BORODINO, ONONDAGA CO., N. Y.
Mention Bee Journal when writing

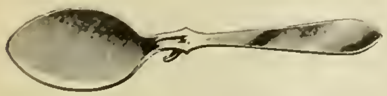
ITALIAN QUEENS

Reared under supersedure conditions, untested at $1.00 each until after July 10th, when the price will be 75c. Queens ready after May 25th. Send for price list. 5A4t

O.F.Fuller,R.F.D.,Blackstone,Mass.
Reference, Arthur C.Miller,Providence,R.I.
Mention Bee Journal when writing.

A New Honey-Spoon.

Over in England they have a handy new honey-spoon—or at least a device in its handle that will prevent it from getting down into the jar of honey on the dining table, thus avoiding sticky fingers and spoilt table-cloths. It is a very ingenious contrivance, and should have a large sale among honey-consumers, especially bee-keepers. It is well plated on high-class nickel. We have secured some of these very unique spoons, and will mail them at 90 cents each. Or, we will send a spoon and the American Bee Journal one year—both for $1.50. It would make a fine gift.



"If Goods are Wanted Quick Send to Pouder."

ESTABLISHED 1889

Bee-Supplies. Root's Goods in Indiana

Standard Hives with latest improvements, Danzenbaker Hives, Honey-Boxes, Comb Foundation and everything that is used in the bee-yard. Large illustrated catalog mailed free. Finest White Clover Extracted Honey for sale in any quantity desired.

WALTER S. POUDER, 859 Massachusetts Ave., Indianapolis, Ind.

Bee-Talk

BEE-TALK is the title of my Educational Catalog of Bee-Keepers' Supplies. A valuable pamphlet touching upon many of the phases of practical Bee-Keeping. Price 10 cents. In part as follows:

The Chaotry Methods For the Expert } Insure an increase of 25 percent in Honey. Insure every comb fancy. No unfinished sections.

Instructions for beginners direct the novice, step by step, through all the year.
"Heat Preservatives" covers some of the vital points in spring management.
"The Bargain Counter" will be of interest to all.

In fact, "Bee-Talk" is a combination of bee-journal and price-list of bee-keepers' supplies It will be worth many dollars to any bee-keeper who will follow its instructions.

Because "Bee-Talk" is valuable to so many bee-keepers who might not become customers, it is proposed to ask for 10 cents in stamps to accompany request. Same to be credited on any order during the year from person sending the 10 cents.

Why do I charge 10 cents for it?

1st.—Because it is different from all other bee-supply catalogs.

There is information in "BEE-TALK" that no other catalog can contain.

"BEE-TALK" is the product of 25 years' personal experience with bees, of two schoolmasters, extending over the western half of the United States.

2d.—Bee-supply catalogs which are free contain little or no practical instruction to bee-keepers.

3d.—Some of our lists are getting old. Many people who were bee-keepers years ago have died, some have moved away, and many no longer keep bees. None of these people will care to receive a supply catalog, and it is a waste of money. Many supply firms print 100,000 catalogs. This involves four items of expense:

(a) Getting the names.
(b) Cost of printing and editing the catalog.
(c) The postage.
(d) Clerk hire.

My Prices to the Consumer are Actually Less Than Other Firms Charge in Car-Load Lots.

The consequence is that the business must pay these expenses in addition to all others, or stop; therefore the supply-dealer must add these expenses to the cost of his goods, and the bee-keeper wonders why supplies cost so much.

The prices listed in "BEE-TALK" on the articles which I make are lower than the same class of goods can be bought anywhere else. To illustrate:

Guaranteed Best Quality

	In Flat—Including Nails.			
	1 Hive.	5 Hives.	10 Hives.	25 Hives.
Other Dealers—1¼-Story 8-Frame Hive (D. T.)..	$1.85	$8.50	$15.50	$36.50
My Price—1½-Story 8-Frame Hive "	1.40	6.75	13.00	31.50
You Save When You Buy of Me	$ .45	$1.75	$ 2.50	$ 5.00

4th.—Fall of 1907 the Minnesota State Fair paid me $50 to demonstrate with live bees at the Fair; Wisconsin State Fair paid me $50 for same.

Fall of 1908 Minnesota State Fair paid me $110.00 in premiums for display of Bees and Honey.

Fall of 1908 Wisconsin State Fair paid me $70.50 in premiums for display of Bees and Honey.

I mention these facts to show you that I can and wish to be of real service to those who want it, but I do not care to force myself on any one who does not desire my services.

I therefore charge 10 cents for "BEE-TALK," and enclose a slip with each catalog which counts as cash when purchasing any goods from me.

Recent Voluntary Testimonials

STORY CITY, Iowa, Dec. 22, 1908.—I am just tickled to death **almost** over the fine material and workmanship in the 100 hives just received. Beats —— Co. so badly there is no comparison.
JOHN EGENES.

HALSEY, Oregon, Dec. 20, 1908.—The goods recently ordered from you have arrived. THINK THEY ARE FINE. Enclosed find a second order and $33.31 to cover. N. T. SNEED.

ST. CROIX FALLS, Wis., Aug. 15, 1908.—We have put together the 1000 sections just received from you, and NOT ONE broke in putting them up. R. D. MCCLANE.

TURTLE LAKE, Wis., March 24, 1909.—I received your card announcing your "BEE-TALK" for 10 cents. I would gladly pay you $1.00 if you asked it. I learned more from your Catalog last year than I did from 12 numbers of................ You shall have my order for supplies this year.
J. O. AASE.

BOSCOBEL, Wis., Feb. 27, 1909.—Some time ago I received your pamphlet called "BEE-TALK." I have read it, and I find no good reason why I shall not order my supplies of you this year, as I believe they are up to the minute; in fact, I want you to start me in the bee-business because you can start me right. J. R. KENNEDY.

VIRGINIA, Ill., April 19, 1009.—Mr. W. W. Bishop sent his third order this year, and said, "Wish to say I never had better or nicer hives than yours." LATER.—"April 23, 1909.—I want to say: Nailed up the first of your hives this morning. I have had hives from 4 other parties, but yours **are the best of the bunch** in material, finish, and say, they go together so nice. I hope you are enjoying a good trade. I have only 10 colonies of bees, and work them for my own use and amusement, as I am 62 years old and cannot do hard work." W. W. BISHOP.

TWO CAR-LOADS

of Bee-Hives and Supplies on hand. Two competent foremen, electric-lighted, water-power plant, ALL at your service. Continuous run, day and night, when necessary. I expect manufacturer's profit only.

Write to-day and enclose 10 cents for "BEE-TALK."

W. H. PUTNAM, River Falls, Wis.

Bees and Queens
FOR SALE

Full colony in 2-story 8-frame L. hives, $7.00; price of queen to be added.

NUCLEI

One 3-frame Nucleus, $2.75; price of queen to be added.

QUEENS

Tested Queen in April and May, $1.25. Warranted, in May, 75 cts.; $7.50 per dozen.

Italian, Carniolan, or Caucasian, at the above prices.

Virgin Queens of the above strains, 25 cts. each; dozen, $2.50. 4Atf

ARTHUR STANLEY,
Dixon, Illinois

Mention Bee Journal when writing.

BEE-KEEPERS

Write us now for our Catalog and get low prices on good, honest,

BEE-KEEPERS' SUPPLIES

Our specialty is making Sections. All other goods up-to-date.

AUG. LOTZ & SON, Cadott, Wis.

10A34t Please mention the Bee Journal.

PRIZE TAKERS

Pharr's Goldens took first prize at 3 exhibits in Texas in 1907. We will furnish Golden, Carniolan, Caucasian, and 3-band Italian Queens, untested, $1.00 till June 1, then 75 cents. Tested, $1.25 till June 1, then $1.00. For large quantities, write. Our 3-band Breeders from W. O. Victor and Grant Anderson strains; other races from the best obtainable. "Prompt service and satisfaction," is our motto. Address, 3Atf

NEW CENTURY QUEEN-REARING CO.,
or JOHN W. PHARR,
Berclair, : : : Texas

Mention Bee Journal when writing.

MR. BEE-MAN!

We handle the well-known

Lewis Bee-Ware

at ***factory prices,*** such as Dovetail Wisconsin Hives, Sections, and everything that is needed by bee-keepers. Also,

Dadant Foundation
and
Bingham Smokers

Illustrated catalog free.

The C. M. SCOTT CO.,
1009 E. Washington St.,
Indianapolis, Ind.

FOR SALE

Hoffman Self-Spacing Frames, in the flat—2 cents apiece.

MRS. AUG. JOSEPHSON,
Box 121 Granville, Ill.

Insure Your Comb Honey Against Breakage

You cannot afford to buy packing-cases for your comb honey till you have investigated the new **Crane Cellular Comb Honey Shipping-Case.** See the description in April 15th Gleanings or in June American Bee Journal.

Why not send 25c for a sample case and see for yourself? The price of sample case will be credited on your first order.

At least send for a circular.

J. E. CRANE & SON, - - Middlebury, Vermont

CHOICE ITALIAN QUEENS

are the result of careful selection and breeding from the best honey-gathering strains of superior long-tongue Italians. Our methods will produce perfectly-developed, long-lived and prolific queens. If you want bees that will winter well, build up rapidly in the Spring, and roll in the honey, our queens will produce them.

We are now booking orders which will be filled in regular rotation, beginning May 1st. You should get in line by placing your orders early.

Single queens—golden or three-banded—$1.00; 6, $5.00; 12, $9.00.
Safe delivery and satisfaction guaranteed.
Send for circular—it's an eye-opener.

4Atf **THE GOLDEN APIARY, Dodge City, Kansas, U. S. A.**

Three Millions

The magic initials A. Y. P. E. are emblazoned on the Horizon of the Occident.

They stand for Alaska-Yukon-Pacific Exposition, which means the World's Fair at Seattle that opens June 1st and closes October 16, 1909.

Six great transcontinental railroads will bring the people of the earth to this wonderful show, viz: Canadian Pacific; Great Northern; Chicago Milwaukee & St. Paul, Northern Pacific, Union Pacific, and Southern Pacific lines. Hundreds of steamships will augment the throng.

The Northwest Farm and Home—the oldest descriptive and agricultural magazine in the world—will distribute **free** at the Exposition several million copies elaborately illustrated and containing articles by well-known authors which will make the periodical invaluable.

Send for rate cards and sample copies.

Northwest Farm and Home
North Yakima, Wash.

J. E. HAND will begin the season of 1909 with improved facilities for rearing the

CHOICEST QUEENS

He has developed a system of queen-rearing that contains all the best points of other methods with none of the defects, including some **valuable improvements** of his own—in short, a system through which the highest queen development is reached by **correct** and **scientific** principles, which means that he is now in position to offer to the bee-keeping public a **higher grade of queens than is usually offered in the common utility classes**, owing to scientific methods which produce queens of a higher development than can be reared by the ordinary methods in vogue, and also to an **improved method of classifying queens** which strikes the word **select** from our list, and gives a **square deal to all.** No selects means no culls, and the highest grade of queens in the untested and tested classes. These queens will be reared from a superior strain of hardy Northern-bred **red clover Italians,** "the very best," and will be safely delivered to any address in the United States, Cuba, Canada or Mexico, at the following prices; Untested, $1.25: 3, $3.00. Warranted, $1.50: 3, $4.00. Tested, $2.00: 3, $5.00. Special prices on large orders. Valuable information free. Send for it to-day.

J. E. HAND, BIRMINGHAM, OHIO, ERIE CO.

Red Clover & Golden Italian Queens Combined

As honey-gatherers, color, etc., my strain have no superiors. Orders booked for July delivery. Untested, $1.00. Select Untested, $1.25. Tested, $2.00. I guarantee a well-pleased customer. Send for circular. 5Atf

W. M. PARRISH, Lawrence, Kan.

Covert, Kan., Sept. 12, 1907.

W. M. Parrish, Lawrence, Kan.

Dear Sir:—The queen I received of you in 1906 yielded, this year, twice as much surplus as any other one colony I have. Clarence A. Hall.

I WANT YOU

to get my new, handsome **Fashion Book,**

HUNDREDS OF LATEST STYLES

with illustrated lessons on Cutting and Dressmaking, **FREE**, and I will sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

I publish the **FARMER'S CALL**, a weekly paper for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for women folks is its fashions in which I show the **5c patterns.** Let me help you to save money.

MY SPECIAL OFFER

Send me 25c and I will send you the **Farmer's Call every week for one year** (about 1000 pages) and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts. because I buy them by the thousand and don't make any profit. I don't want any profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY.

You can use this coupon—cut it out now and mail to me with 25c—1o and 2o stamps taken, but a quarter almost always goes safe:

JOHN M. STAHL—Enclosed 25c for Farmer's Call for one year, your book of patterns, postpaid, and privilege of buying patterns at 5c each.

Name..

P. O..

State.. 18

Very Special Offer

Send me 50c and I will send you the Farmer's Call for one year, the Illinois Farmer for two years, the Fashion Book prepaid, with privilege of buying patterns at 5c each. Use above coupon, but enclose 50c and write I. F. in the corner. Cut out the coupon right now, fill out, and send to

JOHN M. STAHL, J. P. Sta., Chicago, Ill.

(Prop. Farmer's Call for past 25 years.)

IF YOU WANT THE BEE-BOOK

That covers the whole Apicultural Field more completely than any other published, send $1.20 to

Prof. A. J. Cook, Claremont, Cal.,

—FOR HIS—

"BEE-KEEPER'S GUIDE"

Liberal Discounts to the Trade.

Mention Bee Journal when writing.

BARNES' Foot-Power Machinery

Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, **W. F. & JOHN BARNES,**
995 Ruby St., Rockford, Ill.

Mention Bee Journal when writing.

Western Bee-Keepers We Will Show You how to save money. Send for our new catalog of the best Bee-ware made.

THE COLORADO HONEY-PRODUCERS' ASS'N, Denver, Colo.

SATISFACTION

is what I guarantee to those who buy my leather-colored Italian queens. Untested, June, 90c; 3 for $2.50; 6 for $4.75; doz., $9.00; 20 or more at 60c each. Later, 70c; 6 for $3.75; doz., $6.50; 20 or more at 50c each. 11Atf

S. F. TREGO, Swedona, Ill.

40 Years Among the Bees

40 Years Among the Bees

"Forty Years Among the Bees"

By Dr. C. C. Miller

One of the Best-Known Honey-Producers in all the World

THIS book of over 340 pages tells just how Dr. Miller manages his apiaries to produce the most honey, which, in turn, brings the most money. Dr. Miller has been "at it" some 45 years, and so is competent to tell others the best way to be successful with bees. In 1903 his crop of comb honey was over 18,000 pounds, and he is not located in the best honey-producing part of the United States, either—Northwestern Illinois.

The book is bound in substantial cloth, gold-lettered, and is sent postpaid for only $1.00; or with the American Bee Journal one year for $1.50. (Or send us 4 new subscriptions to the Bee Journal—with $3.00—and we will mail you the book **free** as a premium.) Every bee-keeper ought to have both the book and the Bee Journal, if not already possessors of them.

As Dr. Miller gets a royalty on his book—so many cents on each copy sold—every bee-keeper who buys it is thus helping a little to repay him for his effort to lead others to success through his writings on bee-culture.

As we have a good stock of these books on hand, **we can fill all orders by return mail.** This is the time of year to read up on bee-keeping. Better send us your order at once for Dr. Miller's book, and study it carefully so as to make the most of the bee-season. Address,

GEORGE W. YORK & CO., 118 W. JACKSON BLVD. CHICAGO, ILL.

40 Years Among the Bees

40 Years Among the Bees

Chick Culture

is a new book by A. A. Brigham, Ph. D. It contains no fool theories, no crazy systems—just common-sense. It starts with the mating of the stock birds and the setting of the eggs, and carries the reader straight through to the mature fowl. One chapter for each month—80 pages; fully illustrated. Price, 50c with a year's subscription to "Poultry Husbandry."

POULTRY HUSBANDRY,
Waterville, N. Y.

Stop--Look--Listen!

If you want to improve your bees you should try at least ½ doz. of our famous long-tongued Italian Red Clover Queens, bred for business only. Will guarantee them to be equal to the very best queens bred in the U. S. Have been a queen-breeder for 20 years. Untested queens, after May 10, 75 cts each; ½ doz., $4.00. Tested, $1.25 each; ½ doz., $7.00. Nuclei and full colonies in the season. Send for free catalog of Bees and Queens. 4Atf

FRED LEININGER & SON,
Delphos, Ohio

HAND-MADE SMOKERS

BINGHAM
CLEAN
BEE SMOKER

Pat'd 1878, '92 & 1903

Extracts from Catalogs—1907:

Chas. Dadant & Son, Hamilton, Ill.—This is the [illegible] recommend above all others.

G. B. Lewis Co., Watertown, Wis.—We have sold these Smokers for a good many years and never received a single complaint.

A. I. Root Co., Medina, Ohio.—The cone fits inside of the cup so that the liquid creosote runs down inside of the smoker.

All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made	$1.50—4	Inch stove
Doctor—cheapest made to use	1.10—3½	"
Conqueror—right for most apiaries	1.00—3	"
Large—lasts longer than any other	.90—2½	"
Little Wonder—as its name implies	.65—2	"

The above prices deliver Smoker at your post-office free. We send circular if requested.

Original Bingham & Hetherington Uncapping-Knife.

T. F. BINGHAM, Farwell, Mich

Patented, May 20, 1879. **BEST ON EARTH.**

Now Ready

The 97th edition of our catalog is now ready. If you have not received a copy and are ready to place an order for any supplies write for a copy. Our mailing list has over 400,000 names, so time is required to get the entire edition mailed. We explain this so any one may understand why a catalog may not reach him early.

The A B C of Bee Culture

When we announced the completion of the new edition late in 1907 there was a good deal of satisfaction to notice the big bunch of orders on hand, although we did regret the unavoidable delay in getting the books to some customers who had waited patiently for months. Over two thousand copies of this edition have already been sent out. We believe all urgent orders have been filled. We felt that the change of price to $1.50 postpaid might cause a little slackening in the demand. Not so, however, for in all our experience the orders never came faster.

We have also of the English edition a half leather at $2.00 and full leather at $2.50, postpaid.

German Edition, A B C der Bienenzucht in paper covers, $2.00. Cloth-bound at $2.50, postpaid, to any country.

French Edition, A B C de L'Apiculture, cloth-bound, at $2.00, postpaid, to any country.

Gleanings in Bee Culture

If you haven't seen a late copy of Gleanings you can't tell from any brief description how really magnificent it is. There are many valuable departments, and our subscribers just at this season of the year are telling how much they appreciate the paper.

Each issue is very fully illustrated. The covers are done by the finest engravers in Chicago, and our writers are the best in the land. Besides dozens of writers of prominence whose names we can't even mention for lack of space, we have such men as Dr. E. F. Phillips, U. S. Dept. of Agriculture; Dr. Edward F. Bigelow, Associate Editor St. Nicholas; F. Dundas Todd, former Editor Photo-Beacon; Allen Latham, Connecticut, etc.

A trial of six months (12 numbers) costs 25c. If in addition to your own subscription you secure others for six months keep 10c on each one for your trouble. A liberal cash commission to those who do canvassing for us.

Gasoline Engines and Power

Honey Extractors

For large apiaries, or where the honey comes with a rush and labor is scarce, you should investigate our power machines. A circular of these will be sent on request.

THE A. I. ROOT COMPANY, MEDINA, OHIO

Bee-Supplies

Distributor of Lewis and Root Bee-Supplies. We are now prepared to furnish promptly a full line of Supplies and Berry Boxes. Choice new stock just from factory. Beeswax wanted. Send for Catalog.

W. J. McCARTY, Emmettsburg, Iowa

Mention Bee Journal when writing.

BEE-SUPPLIES. 40-page catalog free. Brimful of the latest make of hives, etc. Our supplies will please you in every way. Prices are right. We can make prompt shipments as we carry a full line of A. I. Root Co.'s supplies in stock. Don't fail to write us if you are in need of supplies. 8Atf

JOHN NEBEL & SON SUPPLY CO., High Hill, Monlg. Co., Mo

Mention Bee Journal when writing.

Souvenir Post Cards for Bee-Keepers

Twenty beautiful Souvenir Cards, illustrating the State Flowers of 20 States; on space reserved for correspondence is a well-tried honey-cooking recipe and our name. There are 20 different recipes. They will make a nice present to any Lady. Send in 30c in stamps and we will mail you a set of cards. 5A3t

THE COLORADO HONEY-PRODUCERS' ASS'N.,
Denver, Colo.

Italian Bees for Sale

1 colony, $5; 2 for $9; 5 for $20. Queens—Untested, 75c each; 6 for $4; Tested, $1 each; 6 for $5. Will put swarms into any style hive to suit purchaser. 5Atf

L. BOOMHOWER.
Freehold, Greene Co., N. Y.

Mention Bee Journal when writing.

MARSHFIELD BEE-GOODS

FRIEND BEE-KEEPER—We are prepared to fill your orders for **Sections.** A large stock on hand. Also a **Full Line of Bee-Supplies. We make prompt shipments.**

MARSHFIELD MFG. CO., Marshfield, Wis.

IOWA—J. W. Bittenbender, Knoxville, Gregory & Son, Ottumwa.
KANSAS—S. C. Walker & Son, Smith Center.
MICHIGAN—Lengst & Koenig, 127 South 13th St., Saginaw, E. S.
S. D. Buell, Union City.
NEBRASKA—Collier Bee-Supply Co., Fairbury.
CANADA—N. H. Smith, Tilbury, Ont.
ARIZONA—H. W. Ryder, Phœnix.
MINNESOTA—Northwestern Bee-Supply Co., Harmony.
ILLINOIS—D. L. Durham, Kankakee.
OHIO—F. M. Hollowell Harrison.
TEXAS—White Mfg. Co., Blossom.
WISCONSIN—S. W. Hines Mercantile Co., Cumberland.
J. Gobeli, Glenwood.

Westwood Red-Clover Queens

A New York customer writes, "I have tried queens from a good many breeders, but yours are far ahead of them all." 4A4t

HENRY SHAFFER, 2860 Harrison Ave., Sta. L., Cincinnati, O.

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FOR SALE A Hammond Typewriter in the best working condition. It will be a bargain at the price at which I am going to sell it. Write me at once before it is sold.

F. A. STROSCHEIN, West Bloomfield, Wis.

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"FALCON"
Air-Spaced

Hives are the best all-the-year hives for the bee-keeper who uses no bee-cellar. Can be packed with chaff if desired.

"Sections"
Foundation

Of the highest quality, a trial order will convince.

BEESWAX WANTED

Highest price in cash or supplies. Write for Catalog of full line of our Bee-Keepers' Supplies. Feb. discount, 3 percent.

W. T. FALCONER MFG. CO.,
Jamestown, N. Y.

Headquarters for Bee-Supplies

ROOT'S GOODS — At Root's Factory Prices

Please Rush My Order

We can, as we have several carloads of hives, sections, foundation and all other bee-supplies.

Give Us A Trial

Shipments are made the same day order is received.
We can supply Red Clover and Golden Yellow Queens.

C. H. W. WEBER CINCINNATI ...OHIO...
Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

Honey and Beeswax

CHICAGO, April 28.—The market is dull, few sales of comb honey being made, with best grades ranging from 11 to 12c; off grades from 1 to 3c less, with occasional sales of small quantities at 12 1-2 to 13c for the fancy. Extracted, white, 7 to 8c—the latter price for basswood; ambers 6 to 7c. Beeswax, 30c. R. A. BURNETT & CO.

CINCINNATI, April 29.—The market on comb honey is about over. There is no fancy goods in stock. Low grades are still abundant, but they cannot be sold at any sacrifice. Extracted honey fair; white sage selling at 9c; amber in barrels at 6 1-4 to 6 1-2c. Beeswax is selling slowly at $33 per 100 lbs. C. H. W. WEBER & CO.

TOLEDO, April 28.—There is practically no demand for comb honey. We are making sales in a small way at 14 1-2 to 15c, with no demand for lower grades. White clover in barrels or cans is worth 7 1-2 to 8c in a retail way. Amber, extracted, California, 6 1-2 to 7c. Beeswax 28c cash and 30c in trade.
THE GRIGGS BROS. CO.

DENVER, April 29.—Demand for honey is light. We quote: No. 1 white, per case of 24 sections, $3.00; No. 1 light amber, $2.75; partly granulated comb honey, $1.75 to $2.40 per case, according to condition. White extracted honey, 8¼ to 9c per pound; light amber, 7½ to 8½c; strained, 6 to 7c. We pay 25 to 26c for clean yellow beeswax delivered here.
THE COLO. HONEY PRODUCERS' ASS'N.

ZANESVILLE, OHIO, April 30.—There is some demand for honey though the market is still rather inactive. Best white clover comb honey would bring on arrival 13 to 14c., and sells in a wholesale way at 15 to 16 1-2c. Best extracted wholesales at 9 1-2c. For beeswax I offer 30c in cash or 32c in exchange for bee-supplies.
EDMUND W. PEIRCE.

SAN FRANCISCO, April 12. — Replying to your favor of the 27th ult. relative to market quotations on honey, would say as far as we know there is not a car of honey left either in Southern California or the San Joaquin Valley. There is a limited quantity in the northern section of the State of inferior quality, but outside of this it is our opinion the market is absolutely bare. The indications for the coming crop are excellent, and there is a general opinion there will be a very good crop of honey the coming season.
GUGGENHIME & CO.

BOSTON, May 1.—We quote: Fancy white comb honey, 15c; No. 1, 14c; white extracted, 8 1-2c; light amber, 7 1-2c. Beeswax, 30c.
BLAKE, LEE CO.

PHILADELPHIA, April 29. — Fancy white comb honey, 18c; No. 1, 16 to 16 1-2c; amber, 14 to 14 1-2c. Extracted honey, fancy, 9 1-2c in 60 lb. cans; amber, 7 1-2c.
WM. A. SELSER.

LOS ANGELES, May 3. — Water-white extracted, 8c; white, 7 1-2c; light amber, 7c; amber, 5c. Fancy white comb, 16c; No. 1 white, 15c; fancy light amber, 14c; No. 1 light amber, 12 1-2c. H. J. MERCER.

KANSAS CITY, MO., May 8.—There is no special change in the honey market since our last quotations. The demand for extracted is light while the supply is fairly good. We quote: No. 1 white comb, 24 sections, $2.50 to $2.60; No. 2 white and amber, $2.25; extracted, white, per pound, 6 1-2 to 7c; extracted, amber, 6c. Beeswax, 25 to 28c.
C. C. CLEMONS PROD. CO.

NEW YORK, April 29.—There are no new features whatsoever in regard to comb honey. Extracted is in fairly good demand. The old crop is fairly well cleaned up and the stocks on the market are not heavy. We hope for an increased demand during the next 3 months. Prices are ruling about the same. California extracted is selling at from 6 1-2 to 8 1-2c. Southern and West India at from 58 to 65c per gallon, according to quality. Beeswax steady at from 29 to 30c.
HILDRETH & SEGELKEN.

INDIANAPOLIS, April 28.—There is a very favorable demand for best grades of both comb and extracted honey; and while jobbing houses are fairly well stocked, very little honey is now being offered by producers. Jobbers are making sales at the following prices: Fancy white comb, 14 to 15c; No. 1 white, 12c. White clover extracted, in 5-gallon cans, 8 1-2 to 9c. Amber honey is in poor demand, and prices not established. Bee-keepers are being paid 29 to 31c for beeswax. WALTER S. POUDER;

HONEY FOR SALE

We are producers and shippers of extracted alfalfa honey, in car lots, put up in 5-gal. cans, two cans to the case. Every can is inspected before leaving our warehouse, and all shipments are guaranteed equal to sample in quality.
Sample and price on application. 5A3t
IMPERIAL VALLEY BEE-KEEPERS' ASSOCIATON,
El Centro, California

We will Buy and Sell
HONEY
of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.
We are always in the market for
Beeswax
at highest market prices.
Hildreth & Segelken
265 & 267 Greenwich Street
NEW YORK, N. Y.

HONEY AND BEESWAX
When consigning, buying, or selling, consult
R. A. BURNETT & CO.
199 South Water St. Chicago, Ill
Mention Bee Journal when writing.

DADANT'S FOUNDATION

It Excels....

What's in a Name?

That depends on whose name it is. It depends on what the name represents. It depends on the quality of the goods the name represents. It is **not** the name that makes DADANT'S FOUNDATION so well known and well liked, but it is the

Quality of the Goods

That's what backs up the name, and the **quality** is backed by 30 years of successful experience in foundation making.

EVERY INCH of DADANT'S FOUNDATION is equal to the best inch we can make. Do not fail to insist on Dadant's make when you order your foundation. Accept no substitute even though the dealer claims that his foundation is made by the same process.

It is the PURIFYING PROCESS that counts. Our method of purifying has been unequaled for years. This method leaves every essential in the pure beeswax, and our Foundation does not have the odor of wax cleansed with acids.

That is why several large honey-producers who have tested our foundation side by side with other makes, have found ours to be the best, and the best liked by the bees.

BEESWAX

Do not sell your beeswax until you get our quotations. We have received up to April 1st, over 80,000 pounds of beeswax for our 1909 trade. We will need over 80,000 pounds more before January 1, 1910. Drop us a card and get our prices.

Agents for **Dadant's Foundation** in every part of the **United States.**

DADANT & SONS, : : Hamilton, Illinois

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

Bee-Supplies for Season of 1909

Complete stock on hand, as our plant has been running steadily so as to take care of the demand for **Bee-Supplies** the early part of the coming season. We are practically overstocked at this time and advise those in need of **Bee-Supplies** to order now (shipments may be delayed until you want the goods) before the contemplated advance in prices all along the line. Lumber is dearer and labor has never been so high, but we agree to protect our patrons at present prices upon receipt of their orders at this time.

It will cost you only one cent for a postal card to get our **delivered prices on Dovetailed Hives, Sections, Section-holders, Separators, Brood-frames, Foundation, Smokers, Extractors, Shipping-cases, etc.** It may mean a saving to you of many dollars. It is the natural advantage we have over others that enables us to make you the Best Price. There are no better goods than ours, and we GUARANTEE SATISFACTION or REFUND your MONEY.

Being manufacturers we buy lumber to advantage, have lowest freight-rates, and sell on manufacturer's profit basis. Let us quote you prices. Prompt shipment guaranteed.

MINNESOTA BEE-SUPPLY COMPANY,
152 Nicollet Island, Minneapolis, Minn.

75c and $1.00

Queens on Approval

By return mail. If not satisfactory leave in Post-Office. Write for special prices on Bees and Supplies.

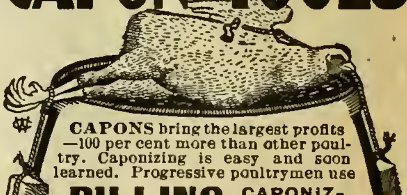
A. M. APPLEGATE, Reynoldsville, Pa.

1878 Ninety and Nine 1909

percent of my queens are purely mated, and they cost no more than queens you think are pure. My 12-page circular is fit for a place on the Library Table, and tells about the two best races of bees in the world. Free for a postal. 4Atf

A. D. D. WOOD, Box 61, Lansing, Mich.

CAPON TOOLS



CAPONS bring the largest profits —100 per cent more than other poultry. Caponizing is easy and soon learned. Progressive poultrymen use

PILLING CAPONIZING SETS

Postpaid $2.50 per set with free instructions. The convenient, durable, ready-for-use kind. Best material. We also make *Poultry Marker 25c. Gape Worm Extractor 25c French Killing Knife 50c. Capon Book Free.*

G. P. Pilling & Son, Arch St., Philadelphia, Pa.

QUEENS

Of High Quality

Our queens are reared by the most **approved methods** by a **queen specialist** of 30 years' experience.

We breed the **Leather-Colored, Red Clover,** and **Golden Italians.**

We solicit the trade of all bee-keepers wishing to secure a **hardy, prolific race** of Italians, whose **honey-getting qualities** have been proven **superior.**

Select untested	$1.00	½ doz. $5.00	1 doz. $ 9.50
Tested	1.50	" " 8.00	" " 14.00
Select tested	2.00	" " 9.25	" " 16.25

Queens by return mail. Prices for large quantities on application. Circular free.

SIRES BROS. & CO.,
North Yakima, Wash.

FOR SALE CHEAP 140 10-frame Ideal supers with frames—new, never been used. Also 50 colonies of bees in 8-frame hives—in any quantity desired.

J. E. LINDER, Rt. 1, Stockholm, Wis.

49th Year
No. 6

June, 1909

75c. a Year
10c. a Copy

Massachusetts
Agricultural
College

AMERICAN BEE JOURNAL

Home of V. Asprea, of Italy, half-ruined by Earthquake.
(See page 198.)

Mass Agl College apr14
Library Amherst, Mass

Home Apiary of V. Asprea, not injured by fall of house near-by.

THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY

GEORGE W. YORK & COMPANY

118 W. Jackson Blvd., Chicago, Ill.

IMPORTANT NOTICE.

THE SUBSCRIPTION PRICE of this Journal is 75 cents a year, in the United States of America, (except Chicago, where it is $1.00), and Mexico; in Canada 85 cents; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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3 times 14c a line   9 times 11c a line
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Reading Notices, 25 cents, count line.

Goes to press the 6th of each month.

National Bee-Keepers' Association

Objects of the Association.

1st.—To promote the interests of its members.

2d.—To protect and defend its members in their awful rights.

3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

☞ If more convenient, Dues may be sent to the publishers of the American Bee Journal.

Crane Cellular Cases are bound to take the lead for shipping comb honey

They are
lighter
stronger
safer

The freight is less

Dealers prefer them

Send for circular

J. E. Crane & Son

Middlebury, Vt.

Untested Italian Queen-Bees

$4.00 for 6 queens; $2.10 for 3; or 75c for

A Standard-Bred Italian Queen-Bee

For a number of **years** we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

What They Say of Our Queens

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work. A. W. SWAN.
Nemaha, Co., Kas., July 15, 1905.

✣✣✣

GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best. She keeps 9¾ Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
Ontario, Canada, July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of my best colonies. N. P. OGLESBY.
Washington Co., Va., July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. MCCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for $1.20. Three Queens (without Journal) would be $2.10, or 6 for $4.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

Address, GEORGE W. YORK & CO., 118 W. Jackson, Chicago, Ill.

Lewis Bee-ware Shipped Promptly

Send for Catalog

Pure Italian Bees, in Up-to-date Hives, and Queens, For Sale.

ARND HONEY & BEE-SUPPLY CO. (Not Inc.) H. M. Arnd, Proprietor,
Successors to YORK HONEY & BEE-SUPPLY CO., 191-193 E. Superior St., Chicago, Ill.
Long Distance Telephone, North 1559

Dittmer's Comb Foundation

Is the Best. Not because we say so, but because the Bees prefer it to other makes.

Dittmer's Process is Dittmer's

It has built its Reputation and established its Merits, on its own Foundation and its own Name.

We make a Specialty of Working Wax into Foundation for Cash.

Write for free catalog and prices on full Line of Supplies.

GUS DITTMER CO., Augusta, Wis.

31-1f

ROOT'S GOODS

Are money-savers. We have a full line of Supplies, 'Bees, Queens, etc., and can supply you with anything in the

BEE-LINE

Queens any quantity. Tested, $1.00; Untested, 75c each. 4Atf

Rea Bee & Honey Co.,
Reynoldsville, Pa.

50 GOLDEN BREEDERS

Bred from superior golden stock last season; now ready to mail. Their bees are hustlers and beauties. These breeders are as good as money can buy. They are simply fine. Their bees are very gentle to handle—$5.00 to $10.00 each; untested queens ready to mail after April 15. Golden and leather or three-banded stock. Our long experience as a queen-breeder is a guarantee that our queens are as good as the best. Untested, $1.00; 6 for $5.00; 12 for $9.00; tested, $1.50; select tested, $2.50; best, $5.00. This season's rearing. Write for prices on a large number.

T. S. HALL, 4Atf
Jasper, Pickens Co., Ga.

Italian Queens

DIRECT FROM ITALY

The Best in the World
EXTENSIVE APIARIES
Address, ENRICO PENNA, Bologna (Italy)

Price-List for America (1909)

One selected fertilized Italian Queen, warranted pure and right mated, in May, $1.40; in June, July, August and September, $1.30.

12 Queens, in May, 14.00; in June, July, August and September, $12.00.

One extra-selected Italian Breeding Queen, in May, June, July, August and September, $3.00.

Advertisement.—In Italy we have but one race of bees; so there is no danger of getting into hybrids. I have never had in my apiaries a single case of foul brood (which is scarcely to be found in this country). So my customers must never have any fear of contagion from my bees. All my queens are reared from extra-selected breeding-queens most carefully tested.

Conditions.—Cash with orders. I send queens post free. In October I don't send queens. The queens that die on the journey will be replaced provided they are sent back immediately in their boxes. Purchasers are earnestly requested to write their addresses very clearly. A letter can be lost by the post; so the customers whose letters remain unanswered are requested to write again for explanation.

Golden Adel Queens

Golden Adel bees and queens are famous the world over for their unexcelled beauty, gentleness, hardiness, and good working qualities. Golden Adel Italians will please you if you want the best strain of bees on earth. L. F. Weaver, of Dexter, Mo., says: "My bees are very gentle, and great hustlers." A Brooklyn customer writes: "The more I see of your bees the better I like them." I breed these queens in their purity, using select stock obtained from Henry Alley, their originator. Only natural methods are used in rearing them, giving us large and vigorous queens. Orders filled in rotation. PRICES: Select queens, $1.00 each; extra select, $1.50; two-frame nucleus and select queen, $3.25; with extra-select queen instead of select, add 50c. Safe arrival and satisfaction guaranteed. Send for circular and be convinced. Send orders to 5Atf

J. R. McCORKLE, Wingate, Ind.

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CYPRIAN, Carniolan, Caucasian, Italian Queens. Untested, $1.50. Tested, $2.00. Bees, $8 colony. Supplies and Honey. 6A1y

W. C. Morris, Nepperhan Hts., Yonkers, N. Y.

Italian Bees

Queens and Nuclei

Choice Home-bred and Imported Stock. All Queens Reared in Full Colonies.

Prices for July to November:

One Untested Queen	$0.75
One Tested Queen	0.90
One Select Tested Queen	1.10
One Breeder Queen	1.65
One Comb Nucleus—no Queen	.80

Safe arrival guaranteed. For price on larger quantities and description of each grade of Queens send for Catalog. All Queens by return mail. A limited quantity of Comb Foundation. Send for sample.

J. L. STRONG
204 E. Logan St., - - CLARINDA, IOWA.

ROOT'S

Bee-Keepers' Supplies

at factory prices, f. o. b., San Antonio.

Weed New Process

Comb Foundation

We manufacture this right here, out of clean Southern wax which is superior to all other. We are careful to retain the original fragrant odor of the hives. It takes skill and care to do this. If you desire to have your beeswax worked up in this way send it here. We wish large quantities of wax from associations to be worked into comb foundation. Write for rates. Reliable agents wanted everywhere. Illustrated catalog free. 5A6t

TOEPPERWEIN & MAYFIELD,
1322 S. Flores St., San Antonio, Tex.

Please mention Am. Bee Journal when writing.

Western Headquarters

FOR

ROOT GOODS

My stock of goods is the largest and most complete carried in the West, and with car-loads continually being added, I am in position to meet every want of the bee-keeper with promptness and satisfaction.

We sell **Root's Goods** here at Des Moines, Iowa, **at Root's factory prices,** wholesale and retail. Send for catalog to-day, or send us a list of the goods you need and we will name you prices according to quantity, by letter. Address, 4A3t

Joseph Nysewander,
565 & 567 W. 7th Street,
DES MOINES, IOWA.

Mott's Strain of Italians

Work red clover and other deep blooms. Hardy and gentle. Untested, 75c. Guaranteed, $1.00. Tested, $1.25. Golden Queens for the same price. Leaflet, "Safe Plans of Introduction," 15c. Also "Rapid Increase," 15c. Or copy of each, 25c. 4A6t

E. E. MOTT, Glenwood, Mich.

Please mention Am. Bee Journal when writing.

—ITALIAN BEES—

Full Colonies and Nuclei

FOR SALE

We offer for delivery any time after April 15, full colonies of Italian Bees, in 8-frame hives, at $7.00 per colony, including queen; or in lots of 5 or more colonies, at $6.50 each.

Nuclei—3-frame, with queen, at $3.50 each; or in lots of 5 or more, $3.25 each. Nucleus orders to be filled about May 10.

The above prices are f. o. b. express, shipping point 100 miles west of Chicago. Orders filled in rotation. Satisfaction guaranteed. Address,

GEORGE W. YORK & CO.,
118 W. Jackson Blvd., - Chicago, Ill.

MILLER'S

Superior Italian Queens

By return mail after June 1st or your money back. Bred from best **Red Clover** working strains in U. S. No better hustlers, gentle, and winter excellent. Untested, from my three-banded **Superior Breeder**—1, $1.00; 6, $5.00; 12, $9.00; after July 1st, 1, 75c; 6, $4.00; 12, $7.50. Special price on 50 or more.

Safe arrival and satisfaction guaranteed. Circulars free. 4Atf

Isaac F. Miller, Reynoldsville, Pa.

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Has the latest report of all the best work in practical entomology. Articles upon apiculture by national authorities appear in it. If you wish the best entomological journal for the practical man, subscribe for it. $2 a year.

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DURHAM, N. H.

BIG BARGAIN SALE

on Bee-Supplies

I have bought all the bee-supplies and machines of the Minneapolis Wood and Machinery Co. Send me a list of what you need, and get the right price. Also **Adel, Carniolan, Italian, and Caucasian Queens.**

CHAS. MONDENG, 4Atf
160 Newton Ave. N., Minneapolis, Minn.

My Beautiful

Twelve-page Circular in colors is taking like hot-cakes. If you have failed to get one, your library table is incomplete, and you have not learned of the two best races of bees on earth, the Pioneer Ranch of imported Italian and Caucasian bees. Just a postal gets it.

A. D. D. WOOD, Box 61, Lansing, Mich.

Queens

of my **Famous Red Clover** and **Golden Stock.** Untested, 50c each; select Untested, 75c each. Tested, $1 each. Nuclei $1 per frame, without queen. 4A5

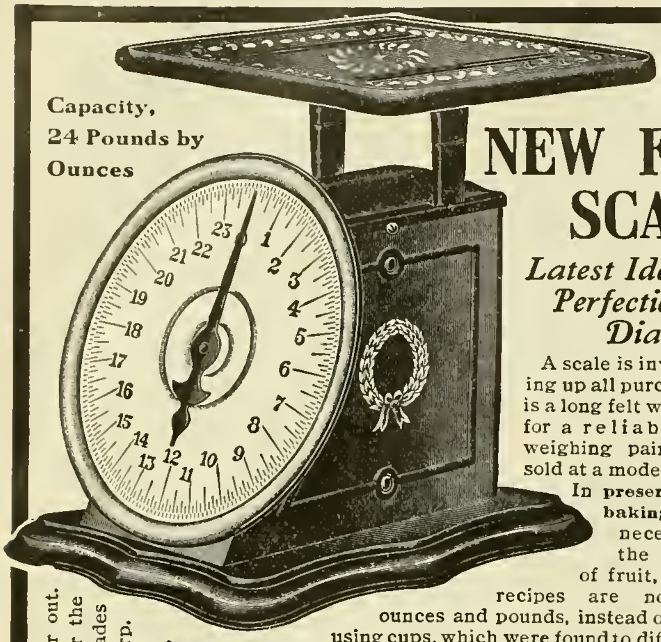
H. A. ROSS, 1709 Upper 2d St., Evansville, Ind.

Carniolan Queens

One tested, $1.00. Write for prices on dozen lots. 300 Carniolan colonies back of the queen-rearing. 6A4t

WM. KERNAN, Dushore, Pa.

SOME GOOD PREMIUM AND CLUBBING OFFERS



Capacity, 24 Pounds by Ounces

The NEW FAMILY SCALE

Latest Idea in Scales-- Perfection Slanting Dial Scales

A scale is invaluable for checking up all purchases made. There is a long felt want in every family for a reliable, accurate, good weighing pair of scales that is sold at a moderate price.

In preserving, cooking and baking, a pair of scales is necessary in weighing the proper proportion of fruit, sugar, etc., as all recipes are now prescribed by ounces and pounds, instead of the old method of using cups, which were found to differ very materially in size.

When the butcher brings a roast or leaves a steak, or the grocery boy delivers your order, it's a mighty good idea to weigh it.

Suppose a roll of butter is purchased. Place a plate upon the platform and turn the screw towards the left until the hand is brought back again to zero. Then the butter is placed on the plate and the actual weight of the butter is indicated on the dial.

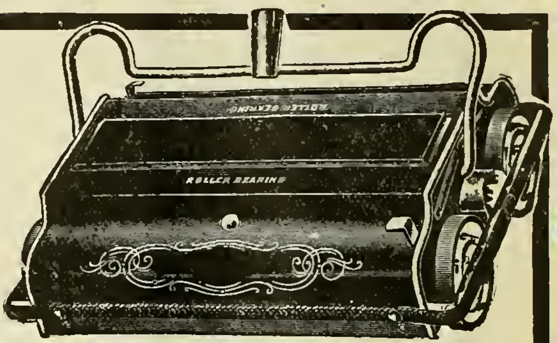
Warranted absolutely accurate and will last a life-time. Each scale packed in an individual box.

It is entirely different from any scale ever offered.

It is built entirely of steel, except the dial, which is made of aluminum with the marks and figures large enough to be seen easily. The back-ground is finished in black. The platform is made of a heavy glazed tile, supported on double steel uprights. This is entirely new and never seen on any scale before.

The scale is beautifully finished in Aluminum Bronze, artistically decorated. It can be instantly adjusted to be used with a basket, plate or any other vessel.

Price, $1.40, by express, not prepaid; or with the *American Bee Journal* one year—both for $1.90; or given free as a premium for sending us 5 new subscribers at 75c each.



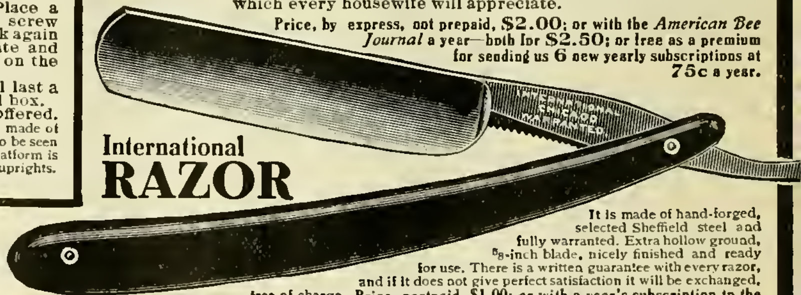
EUREKA CARPET SWEEPER

Case is made of cold rolled sheet steel, finished in a high grade dark green bicycle enamel, baked on. The broom action is constructed so that while it is a very sensitive action, yet the wheels are always in perfect frictional contact with the brush roll.

The sweeper will not get out of order in any way as the construction is simple, there being but two springs used and they are the springs that hold the dust pans firmly in place. The wheels are also made of cold rolled pressed steel, with long cone bearings, fitted with best grade of rubber tires. The sweeper has an anti-tipping attachment, so that no matter how quickly it is drawn over the carpet it will not tip up.

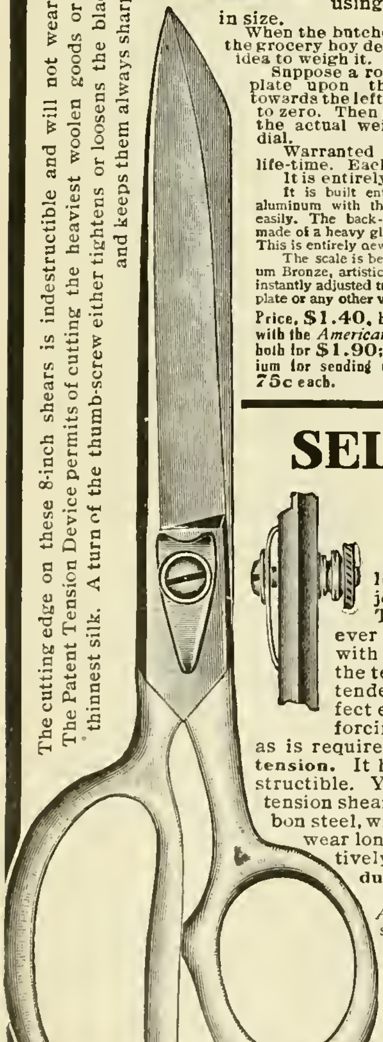
The brushes are of the best grade imported Chinese bristles, and in ordinary service are guaranteed to last from 8 to 10 years. **No better brush is made** no matter what price the sweeper sells for. On account of the all-steel construction the length of the sweeper is about 1 1-2 inches less than other sweepers, although the length of brush is just the same. For this reason it will sweep closer to base-boards or furniture—a fact which every housewife will appreciate.

Price, by express, not prepaid, $2.00; or with the *American Bee Journal* a year—both for $2.50; or free as a premium for sending us 6 new yearly subscriptions at 75c a year.



International RAZOR

It is made of hand-forged, selected Sheffield steel and fully warranted. Extra hollow ground, ⅝-inch blade, nicely finished and ready for use. There is a written guarantee with every razor, and if it does not give perfect satisfaction it will be exchanged, free of charge. **Price, postpaid, $1.00; or with a year's subscription to the *American Bee Journal*—both for $1.50; or free as a premium, for sending us 3 new yearly subscriptions at 75c each.**

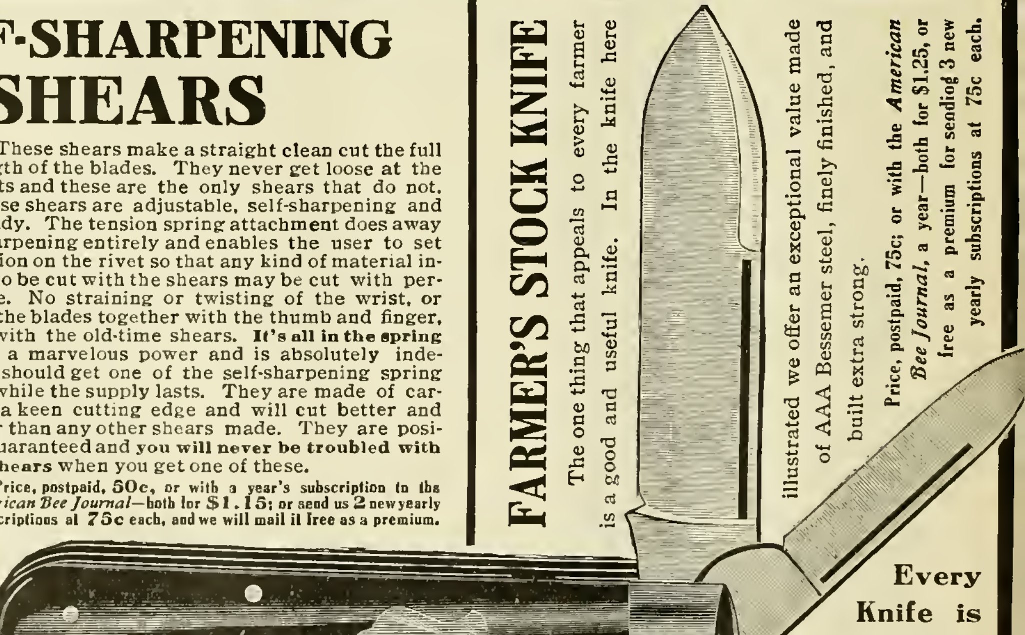


The cutting edge on these 8-inch shears is indestructible and will not wear out. The Patent Tension Device permits of cutting the heaviest woolen goods or the thinnest silk. A turn of the thumb-screw either tightens or loosens the blades and keeps them always sharp.

SELF-SHARPENING SHEARS

These shears make a straight clean cut the full length of the blades. They never get loose at the joints and these are the only shears that do not. These shears are adjustable, self-sharpening and ever ready. The tension spring attachment does away with sharpening entirely and enables the user to set the tension on the rivet so that any kind of material intended to be cut with the shears may be cut with perfect ease. No straining or twisting of the wrist, or forcing the blades together with the thumb and finger, as is required with the old-time shears. **It's all in the spring tension.** It has a marvelous power and is absolutely indestructible. You should get one of the self-sharpening spring tension shears while the supply lasts. They are made of carbon steel, with a keen cutting edge and will cut better and wear longer than any other shears made. They are positively guaranteed and **you will never be troubled with dull shears** when you get one of these.

Price, postpaid, 50c, or with a year's subscription to the *American Bee Journal*—both for $1.15; or send us 2 new yearly subscriptions at 75c each, and we will mail it free as a premium.



FARMER'S STOCK KNIFE

The one thing that appeals to every farmer is a good and useful knife. In the knife here illustrated we offer an exceptional value made of AAA Bessemer steel, finely finished, and built extra strong.

Price, postpaid, 75c; or with the *American Bee Journal*, a year—both for $1.25, or free as a premium for sending 3 new yearly subscriptions at 75c each.

Every Knife is Warranted

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AMERICAN BEE JOURNAL

L.L. LANGSTROTH
CHAS. DADANT

(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

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GEORGE W. YORK, Editor CHICAGO, ILL., JUNE, 1909 Vol. XLIX—No. 6

Editorial Notes and Comments

Shipping-Cases of Corrugated Paper

On another page Mr. J. E. Crane gives particulars and illustrations of a shipping-case that he has been using with great satisfaction for 3 years. It is said to be lighter, stronger, and cheaper than a wooden case. One hesitates to believe that it is stronger than a wooden case, but it bears the weight of a man standing on it, which a wooden case would hardly do. However, it is not so hard to understand its greater strength when its construction is understood. It is the upright partitions in the case that give such strength as to allow a man to stand with his full weight on a case.

Still more important is the fact that the construction practically makes the sections several times stronger. That is, the sections in one of these cases will come unharmed out of a tumble which would ruin them in the ordinary case. A wooden case filled with combs fell 18 inches, and every comb but 2 was broken. A paper case fell nearly 3 feet, and not a comb was broken. That is explained by the fact that each section has a separate compartment, and is surrounded on all sides by a cushioned wall.

Dr. C. C. Miller received one of these paper cases, and sums up the arguments for and against it in a Stray Straw:

> That Crane shipping-case of paper—doesn't look so pretty as the old case. You can't make as fine a show with such cases piled up as you can with wood-and-glass cases. In making a big pile, or loading a car, it is not quite so easily handled, and won't pack quite so smoothly; will take more time to fill sections into the little compartments. After a case is filled it will take longer to tie up than to tack on a wooden cover. Those are the objections that seem possible. No other objection occurs. On the other hand, we have "a lighter, stronger, cheaper case." Then the item of safety. That is a big item; for those who have not been able to ship without much breakage, an immense item. A single case or any number of cases may be shipped without fastening in a car, and without the heavy expense of carriers. Some may pack a carload of the old kind so as to travel in safety. Even then, it must be handled in smaller lots when it comes into the hands of the jobber, and then the greater safety of the paper comes into play.

We have examined a sample case, and, judging from the extensive experience we have had in shipping comb honey, we think the new Crane shipping-case is all right. It is very strong, light in weight, and certainly should answer every purpose for which it is intended. We hope bee-keepers will give it a thorough trial, as we are sure they will like it very much.

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Laying-Worker Colonies

It happens only too often at this time of year that a colony will be found with no brood except drone-brood. There may be a drone-laying queen, or there may be laying workers. In either case the probability is that most of the bees present are too old to be of much value, and the experienced bee-keeper will generally think that the most profitable thing he can do is to break up the colony unceremoniously, distributing to other colonies the combs with adhering bees. At a time when bees are gathering, these will be kindly received anywhere.

But it is hard to make the beginner feel that there is any gain in having one less hive with bees in. If he has 6 colonies, one of them infested with laying workers, the breaking up of that one colony will leave him the possessor of only 5 colonies. Such a thought is not to be endured. He says, "It's a very simple thing to give that colony a frame of brood from another colony, and it will rear a queen.

If you, gentle reader, happen to be that beginner, it may be worth while to say to you that a colony that has been queenless for a considerable length of time is not in the best condition to rear a good queen, if indeed it rears one at all. But you will not be persuaded. You'd rather have a poor queen than none at all. You, who are the proud possessor of 6 colonies, have no notion of being reduced to the ranks of those who possess only 5 colonies each. Perish the thought!

Well, if you will not be persuaded to break up the colony, at least you can make your chances a little better—a good deal better. Swap brood and bees with other colonies. Go to a good colony, take from it a frame or two of brood with adhering bees—be careful you don't take the queen—and give this colony a like number of combs with adhering bees from the faulty colony. Do this until you have disposed of all the contents of the hive containing the queenless colony, putting into said hive the good brood and bees you have taken from the other colonies. Now you have in this hive a stock of young bees with an outfit of brood in all stages, and if the colony is strong enough, and if honey is yielding well, a good queen may be reared. Of course it will hasten matters if a sealed queen-cell is given to the colony. Still better, if you can give a laying queen. Some of the field-bees will return to this hive, and that will be a good thing.

◆

Abundant Ventilation

Never was there a time when so much importance was paid as to the importance of plenty of good air for man and bee. It is easy to have a deep space under bottom-bars in winter; but in summer the bees may build down combs. J. P. Blunk, in Gleanings, overcomes this difficulty by having an opening at the back as well as at the front of the bottom-board and with this chance for a passage clear through, he says there is no building down.

On the same page, Dr. C. C. Miller, while commending the plan, points out that it is better suited for hives standing singly than for those standing in groups of 4. In the latter case there is likely to be some mixing of bees. But can any great harm come from mixing? He says that at one time he had his hives raised by means of a block at each corner. There was no building down, but it was unpleasant to work sitting beside such a hive, as the bees would come out at the side and sting his legs. But why didn't he set a board against the side of the hive while sitting there?

If there can be an abundant opening without having the bees build down—it ought to be quite a factor in preventing swarming.

◆

Destroying Queen-Cells and Swarming

Sometimes the beginner thinks he is pretty much master of the situation because he can take out the combs of a colony and kill all queen-cells that have been started. He reasons: "Bees always start queen-cells before swarming, and the first swarm issues when the first cell is sealed, or about 8 days after the egg is laid in the cell. So if I kill all cells once every 8 days, there will be no chance for a swarm to issue. Good scheme, and easy."

But it is not so good as he thinks. In one case it may be that when the cells are killed once, there may be no further attempt at swarming. But in another case there may be cells started again within a day or so. If these are again killed, it only seems to make the bees more determined, and finally the bees may conclude to swarm with queen-cells only slightly advanced, or indeed with none started at all. It may as well be fully understood that destruction of queen-cells is not to be depended on as a preventive of swarming.

The exception to this is in the case of afterswarms. When the prime swarm issues, the old queen goes with it, and under ordinary circumstances a second swarm may issue about 8 days later. If, however, a day or two before this time all queen-cells but one are killed, there will be no more swarming.

That sounds easy; and yet the experienced bee-keeper is not likely to practice nor to advise killing queen-cells to prevent afterswarms. There is an easier and better way. It has been given a number of times in these columns. When the prime, or first, swarm issues, set the hive containing the swarm on the old stand and set the old hive close beside it. A week later move the old hive to a new stand 10 feet or more distant. That's all; the bees will do the rest. No need to open the hive at all. Moving it that short distance is easier than to open the hive and hunt the cells. Besides that, it is surer. You may miss a cell; the bees will not.

Some beginner may say, "I think I'll make the matter still easier by setting the old hive at once at a distance where it is finally to remain." That may be easier, but by no means so sure. For if set at once where it is finally to remain, the old colony will during the next 7 or 8 days have a large number of young bees emerging from their cells and will feel fully competent to send out another swarm.

The case is utterly different if the old hive be placed beside the swarm and not moved to a new place for a week. When then moved, all the field-bees will, upon return from foraging, go straight to the old place and join the swarm. This will greatly deplete the mother colony. Not only that, for a day or so nothing will be brought into the hive from the fields. Even if there were no depletion in numbers, this sudden dearth coming suddenly upon them would be enough to drive out all thought of swarming.

Don't think of depending on the killing of cells to prevent either prime swarms or afterswarms.

◆

Getting Many Queen-Cells

A new way of getting queen-cells in quantity is given by Hans Pechaczek, *Bienen-Vater*, 247. Let the best queen fill a frame with eggs. When the oldest larvæ are a day old, cut the cells into strips somewhat Alley fashion, only don't cut through the septum. With a narrow chisel scrape away between the strips, making sure to leave no eggs or larvæ. Destroy eggs or larva in every alternate cell in each strip. Put this frame flatwise over a strong colony having no queen or open brood. Let it be raised just enough above the top-bars so that there shall be room to build down queen-cells, not allowing the bees to get at the upperside of comb.—Stray Straw in Gleanings.

The question may be raised whether the quality of the product will be all right if the quantity be as great as one might suppose with the foregoing plan. It has been claimed that not more than 10 to 12 cells should be produced at one time if they are to be good. It is doubtful, however, whether we have any very positive knowledge on this point, although it is very desirable that we should have. Some colonies, notably Cyprians, start 50 cells or more at a time, and so far as reported they are as good as in cases where only 5 or 10 are started. Naturally, one would suppose that instinct would hardly lead the bees astray. Moreover, at the time when bees are preparing to swarm there is a great falling off in the laying of the queen, and consequently a smaller number of worker-larvæ to be fed. That, surely, ought to leave an abundance of extra food for the royal youngsters.

When a colony is made queenless, there is an entire cessation of egg-laying. That will make no difference in the number of mouths to feed until the end of about 3 days. Then, supposing the queen had been laying at the rate of 2,000 eggs a day, there will be a daily falling off of 2,000 boarders. That ought to leave a pretty good chance for a big lot of queen-cells.

"But," asks some one, "how about that first 3 days when there is as yet no diminution in the number of the regular boarders?" Well, in the first 3 days we are told the food given to royal larvæ is the same as that given to worker-larvæ, and the probability is that in the first 3 days of its existence the quantity of food consumed by a royal larvæ does not differ much from that consumed by a worker-larvæ. To be sure, a royal larva is fed very lavishly, but it does not consume all it is fed.

Miscellaneous News-Items

The Iowa Bee-Inspector Law

It seems that the legislature of Iowa passed a Bee-Inspector bill a short time ago, but it carried with it no appropriation of funds. Consequently the Governor will make no appointment of inspector, there being no funds available for paying the expenses.

This looks very much af if the lawmakers of Iowa had handed the bee-keepers a gold-brick. It seems very strange that a bill should be passed that required funds in order to make it effective, and then no funds provided for such use. What's the matter with Iowa's law-makers? The bee-keepers there ought to get the business end of the bee after them!

◆

Bee-Keeping and Italian Earthquake

On page 121 of the April American Bee Journal, we published something about Signor Vincenzo Asprea, an Italian queen-breeder, who lived near the scene of the great earthquake which occurred in December, 1908. Since that item was published we have received two pictures from Mr. Asprea, accompanied by the following letter:

MR. GEORGE W. YORK, CHICAGO—

DEAR SIR:—I thank you for the kind words in the American Bee Journal for April, 1909. I send you the photographs of my home and home apiary. As you can see, my home was half ruined by the earthquake of December 28, 1908. I am demolishing it, as it is uninhabitable. The ruins that can be noticed near the apiary belong to another house, and not a hive was injured by the fall. But I lost the bee-laboratory and some tools.

Unfortunately enough, my sister and brother-in-law were killed by the earthquake in Reggio. There were about 120,000 dead in Reggio and Messina. Yours truly,

VINCENT ASPREA.

Gallina, Calabria, Italy, May 11.

We were pleased to receive the pictures shown on the first page, which

Signor Asprea so kindly sent to us. They are very interesting.

◆

A Report from Austria

Mr. Alex. Schroeder, of Trieste, Austria, wrote us May 5, as follows:

> Dear Mr. York:—I beg you to accept my best congratulations and good wishes for many more years to come in connection with the American Bee Journal. This is in response to your Twenty-fifth Anniversary editorial, in the April number.
>
> I have been ill now for about 4 weeks, with a big anthrax that has weakened me materially, but now I can get up and walk about, and hope that within a week or so to be able to attend to my business again.
>
> April was fine, but May up to this time has been cold and rainy.
>
> With best wishes and greetings from Mrs. Schrœder and myself, I am,
>
> Yours faithfully
> Alex. Schroeder.

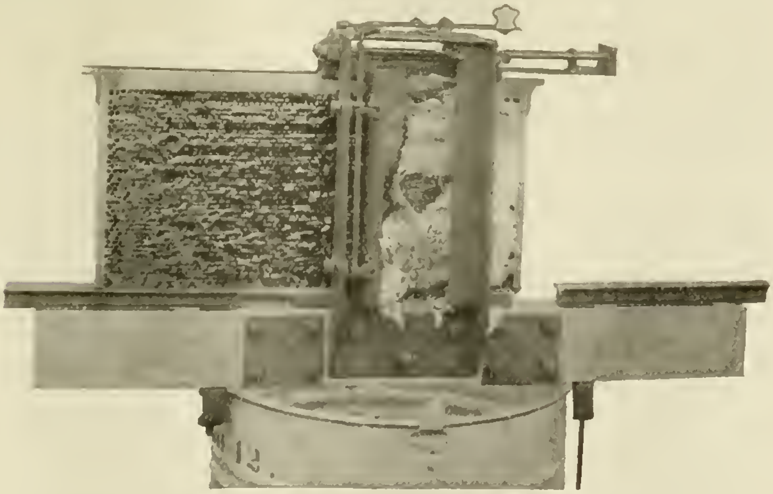
Our readers will remember that Mr. and Mrs. Schroeder made a short but very pleasant visit to the United States last year. We mentioned their call on us at the time.

◆

Australian Honey

Everyone thinks his own baby prettiest. In the Northern States there is a general preference for white-clover honey. In California, nothing equals the flavor of sage honey. In Australia is to be found the delightful honey from the eucalyptus. Yet the London market will have none of this eucalyptus honey in spite of earnest efforts to introduce it there as a superior table honey. That bright Australian, R. Beuhne, after interviewing the leading markets of England, Germany, and America, thus sensibly sizes up the situation, in The Federal Independent Bee-keeper:

> "Taking all these facts into consideration, it cannot be doubted any longer that the honey gathered from our eucalypts possesses a distinct flavor, not noticeable to Australians, who are used to it, but very evident to people in other countries. This flavor is not necessarily that of the essential oil of the eucalypt, and the term eucalyptus flavor does not imply more than a description of the characteristics of honey gathered from these trees."



No. 1—Ferguson Uncapping Machine in Actual Operation.

Death of William Russell

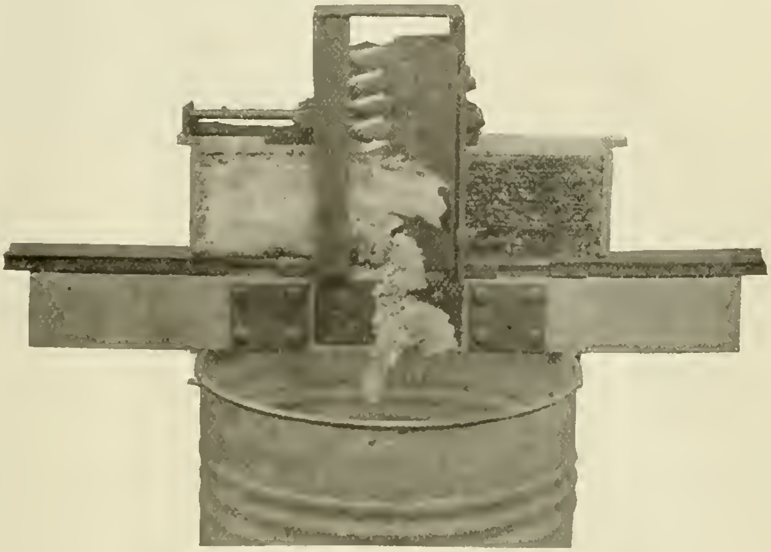
William Russell, State Bee-Inspector of Minnesota, died Sunday, May 16, 1909, at the Thomas Hospital, Minneapolis, after an illness of 3 months. The latter part of January he fell 12 feet and received injuries, which, complicated with a severe attack of grippe, resulted fatally.

Mr. Russell was born in Cullen, Scotland, April 4, 1850. He went to Minneapolis in 1884, and located at Minnehaha Falls, where he remained.

In 1890 Mr. Russell began bee-keeping as a business, and devoted much time and study to this work, which he found very congenial. When the office of State bee-inspector was created, Governor Johnson honored him by the appointment, and he was reappointed thereafter. In the death of Mr. Russell, Minnesota loses one of its most enthusiastic workers for the interest of bee-culture.

It was our good fortune to have a personal acquaintance with Mr. Russell, having met him at a number of bee-keepers' conventions. He was a very genial and interesting man, and always ready to do his part in any line of work in which he became interested. Some years ago, we had considerable business dealings with Mr. Russell, and everything was always entirely satisfactory.

His wife will have the tender sympathy of all bee-keeping friends in her bereavement.



No. 2—Ferguson Uncapping Machine—Simpler Adjustment.

The Ferguson Uncapping Machine

Some time last fall we mentioned this machine in an indirect way, as Mr. Ferguson was not quite ready at that time, to have it announced under his name. Even now he is not prepared to offer it for sale, but has completed several of the machines for use in experimenting in a few of the large extracted-honey apiaries. For simplicity and inexpensiveness we believe it will lead all others for the present. In fact, we can scarcely imagine how a machine could be invented for the purpose of uncapping honey that would be any simpler in its mechanism, and cheaper in its production, and yet do the work properly. It is light in weight and very compact, not weighing over about 25 pounds so that it can easily be carried in one hand. There is practically nothing about it to get out of order, and for rapidity of uncapping we don't see that anything further could be desired. In trying it with Mr. Ferguson, we found that combs could be run through it and satisfactorily uncapped at the rate of about 6 a minute, and that surely is "going some."

It is easily adjustable for different thicknesses of combs, and also for various depths of frames. Neither heat nor any outside power other than that of the hand is necessary to do the work with this machine. In introducing and withdrawing the comb it is not necessary to touch anything but the frame. The cappings drop where wanted away from the knives so that it is also clean to manipulate.

Fig. 1 represents a regular Langstroth extracting-frame which help [illegible] get an idea of the size of the machine. When introducing a frame it is set in a bottom guide and is then pushed between the two sets of uncapping-knives until the nearest frame end-bar is about even with the uprights of the machine, when a dog or catch falls back of the end-bar, which with a further push sends the comb clear through the machine, completing the uncapping.

Mr. Ferguson has two styles of this machine, one of which can be adjusted to different thicknesses of comb and frame by simply moving the part showing the knob at the top. The other style is adjusted with set-screws. This latter style is preferred, as it is somewhat simpler and stronger than the other.

The combs shown are some that were filled last season, and had from one-fourth to one-half granulated honey, but this did not prevent doing a good job of uncapping. Undoubtedly this machine will uncap satisfactorily any honey that can be extracted.

Mr. Ferguson arranged to secure patents protecting his invention, and, as above noted, has planned with some large honey-producers in various parts of the country for making a thorough test of his machine this season, and until it has had a satisfactory trial and proved to be in every way what such a machine should be, none of them will be for sale.

Mr. Ferguson has been working on his machine for a number of years, making several models, and believes that he has finally produced one that will be a complete success. No doubt when he is ready to put it on the market he will have literature that will describe the machine and its manipulation in detail so that any bee-keeper who does enough extracting to be worth while can easily understand how to use it properly. By another season Mr. Ferguson expects to have arranged for its manufacture, and be able to furnish it to all who want it.

Moving Bees Short Distances in Summer

"The New-Mexico Chap" seems to have had a good deal of experience in moving bees short distances in warm weather, and he says, in Gleanings, that if they can be moved at any time when they have found no honey for 2 weeks, they may be moved without precaution, and few or no bees will return to the old location.

Field-Meeting of New Jersey Bee-keepers

The New Jersey Bee-Keepers' Association will hold a field-meeting in Mr. Harold Hornor's apiary, neat Mt. Holly, Burlington, N. J., Saturday, June 26, 1909.

An interesting program of talks and demonstrations will be given. All arrangements are not made yet, but will include as follows:

"Treating Foul Brood, and Getting a Honey Crop at the Same Time," by W. W. Case, President of the New Jersey Association; Miller's "Automatic Decapper" will be demonstrated by Mr. Miller or representative; transferring from box-hive to frame-hive; queen-hunting contests by experts; requeening; Pratt's Swarm-Box to start queen-cells; observation hives, etc.

All bee-keepers and others interested in New Jersey, Eastern Pennsylvania, Delaware, Southern New York, and Connecticut are invited to attend. The Philadelphia Bee-Keepers' Association will attend as invited guests.

Mt. Holly is on the Pennsylvania Railroad, and can be reached from all points on that line and connecting lines. It can also be reached by trolley line from Philadelphia and Camden, N. J.

Bring any samples of 1909 crop comb and extracted honey; also of common and rare honey-plants in your locality for identification and classification. One or more expert botanists will be present.

We would like to have those who expect to attend, to drop us a postal in advance. It will be an advantage to know in advance what provision to make in the way of lunch and refreshments.

Albert G. Hann, *Sec.*

Pittstown, N. J.

Honey Imported Into the United States

Bee-keepers are sometimes inclined to be alarmed about the amount of honey imported into this country. D. Steengrafe, in Gleanings, shows that the large amount is more apparent than real. The year 1908 shows the largest imports for many years back. In that year, the total arrivals at New York were 985,620 gallons. But of this amount Mr. Steengrafe says 712,800 gallons were in transit for Europe, leaving only 272,820 gallons for consumption in this country. If we figure that at 12 pounds to the gallon, and 6 cents a pound, the value will be $196,430. Dr. Phillips estimates the annual production of honey in the United States at somewhere about $20,000,000 in value. The value of the imported honey consumed in this country will be seen to be less than 1 percent of that. The price of honey, therefore, can not be so very greatly affected by the imported article.

Alexander's Practical Bee-Culture

We have received a copy of "Alexander's Writings on Practical Bee-Culture," edited and compiled by H. H. Root, Associate Editor of Gleanings in Bee-Culture. It is a 96-page pamphlet, 6 by 9 inches in size, and contains practically all of the splendid articles on bee-keeping written by the late E. W. Alexander, who was perhaps the most extensive as well as one of the most practical bee-keepers in New York State. For nearly 40 years he had kept bees in a large way, producing honey by the carload. In this pamphlet he gives the cream of his long and successful experience with bees. Some of the chapters are as follows: "Bee-keeping as a Business," "Profits in Bee-Keeping," "Spring Management," "Building up Weak Colonies," "Spring Feeding," "Transferring Bees," "Honey Production," "Comb vs. Extracted Honey," "Disposing of the Honey Crop," "Better Prices on Honey," "Queens and Queen-Rearing," "Wintering Bees," "Bee-Disease," etc. It is a very comprehensive book, and ought to be in the hands of every bee-keeper who desires to have the largest success possible with the bees. It is sent postpaid for 50 cents, or we club it with the American Bee Journal for one year—both for $1.15. Address all orders to the office of the American Bee Journal.

Recipe for Paste

Work 4 pounds of soft wheat flour into a batter (free from lumps) with 2 quarts of cold water. Dissolve 2 ounces of alum, in one-half pint of hot water. Take 2 gallons of boiling water and stir the batter into it. If necessary, continue boiling until the paste thickens into a semi-transparent mucilage, then stir in the alum solution. As a preservative, add a few drops of oil of cloves.—A. T. S., in Practical Printer.

To New Jersey Bee-Keepers

Our foul brood bill failed to pass. It was introduced into the Senate by Senator Gebhardt, of Hunterdon county, and was defeated by *one* vote. Of course, it did not get to the Assembly, so we do not know how they stood. It was supported by the Senators from the agricultural counties and objected to by the Senators from the cities. We asked for an appropriation of $500, and that was the chief objection to the bill. There is a threatened deficit in the State treasury of over $500,000, so all new legislation that included appropriations was objected to. All appropriations in the State were cut down.

We were disappointed but not discouraged. We will try again next year. The finances of the State will be in better shape, and the matter will be better understood, hence we will stand a better chance to get our law.

In the meantime, we would like to be kept informed about the extent of foul brood in the various parts of the State, and to have more bee-keepers to join our Association. The better we are informed on the extent and injury of foul brood in the State, and the stronger our State Association, the more effective we can argue with the legislature.

Albert G. Hann, *Sec.*

Pittstown, N. J.

"The Honey-Money Stories"

This is a 64-page and cover booklet 5¾ by 8½ inches in size. Printed on enameled paper. It contains a variety of short, bright stories, mixed with facts and interesting items about honey and its use. It has 31 half-tone pictures, mostly of apiaries or apiarian scenes. It has 3 bee-songs, namely: "The Hum of the Bees in the Apple-Tree Bloom," "Buckwheat Cakes and Honey," and "The Bee-Keeper's Lullaby." It ought to be in the hands of every one not familiar with the food value of honey. Its object is to create a larger demand for honey. It is sent postpaid for 25 cents, but we will mail a single copy as a sample for 15 cents, 5 copies for 60 cents, or 10 copies for $1.00. A copy with the American Bee Journal one year—both for 80 cents. Send all orders to George W. York & Co., 118 W. Jackson, Chicago, Ill.

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Diseased Bees and How to Treat Them.

Dear Miss Wilson:—I have discovered dead brood in considerable quantity in 2 of my colonies, and do not know if it is foul brood or not. The brood apparently all died at the same age, just as the larva becomes upright in the cell. Some of the cells are capped, and the caps broken and sunken. The dead brood does not smell, nor does it rope. Still I fear foul brood or some other brood-disease.

1. Can I do better than employ the McEvoy method?

2. I have discovered the dead brood in 2 colonies. I have 10 other colonies apparently healthy, but there has been great exposure, exchange of combs, honey dropped, etc. Do you advise treating all colonies as the wisest plan?

3. As I understand the McEvoy plan, the bees are first shaken onto foundation-starters, then after 4 days of comb-building, given full sheets of foundation. Will it be necessary to destroy the frames given with the starters?

4. Would it be possible to disinfect all frames, even those having the dead brood, by repeatedly boiling the frames, but destroying the old combs?

5. Can the queen-excluders, hives, fixtures, etc., be disinfected and used again? If so, how?

6. It will be a month before I hear from you; at least a month before I can get supplies for New York, bringing us to July. By that time there will be only a very light honey-flow. Can the treatment be employed then?

7. Is there any one to whom I could send a sample of the dead brood to learn positively if it is diseased brood? Please give his address and state charges.

8. How would it do to wait until fall when there is no brood in the hives? They would have to be fed when shaken on the foundation-starters, would they not? If treated when the hive is full of brood, must the brood be destroyed?

(Miss) Kate Beatties.

Thibodeaux, La., April 10.

It is a very unusual thing for any of the sisters to report anything like foul brood. Is it possible that they have less trouble with it than the brethren?

1. No; but remember that the McEvoy method includes treatment in the fall as well as during the honey-flow.

2. It is hardly necessary to treat a colony so long as the brood appears perfectly healthy.

3. No; merely melt up the contents of the frames.

4. Yes.

5. Mr. McEvoy thinks that hives need not be disinfected. Editor Root, who has had much experience with foul brood, thinks that while that would generally be safe there may be occasional exceptions; and that it is better to disinfect at all times. Moisten the inside of the hives with kerosene, touch a match to it, and the slight burning out will do the business. Frames, etc., may be treated the same way.

6. Yes. But it is possible that it may be even better to use Mr. McEvoy's fall treatment. See last item on page 166 of this Journal. The main point to keep in mind is that you must have combs filled and sealed by *healthy* colonies, and that there must be at least some pollen present.

7. Yes, send sample to Mr. N. E. France, General Manager of the National Bee-Keepers' Association, Platteville, Wis. If you are a member of the Association there will be no charge. If not, send along a dollar to become a member.

8. This is answered in No. 6. If treated when the hive is full of brood, the brood must be destroyed.

◆

The Spring and Condition of the Bees.

The spring of 1909 was unusual. Not in many years has there been a spring before when there were so few days up to the 4th of May when bees could fly. The blooming of the soft or red maple is usually the signal for taking the bees out of the cellar. The first maple was seen in bloom March 25. But the weather was so forbidding that it was not thought advisable to take out the bees just yet, and very few of the maples were out till April 5, when the bees were taken out.

On that day the thermometer went up to 73 degrees, and the bees had a glorious flight, after their 129 days' confinement. But after that day they had little chance to fly. It was cold and wet mixed up with rain, snow, hail, lightning, thunder, and wind (took off a chimney of the house and part of the shop roof), and whenever the bees did have a chance to fly they seemed desperate in their attempts to rob. May 1 it snowed a good part of the day, thawing about as soon as it fell, but May 4 it was warm enough for bees to fly, and May 5 it seemed to burst out into summer weather, with the thermometer at 84. Then the bees quit their meanness, gave up robbing, and turned their attention to the fine display of dandelions, having had practically no chance at soft maples and elms.

We always plan to have the bees supplied with abundant stores in the fall, so that there will be no need to open the hives until fine weather comes in spring. But for some reason there will always be an occasional colony rather light when taken out in the spring; possibly because it overeats. There were half a dozen or so of such colonies, and to each of them, as soon as convenient after they were taken from cellar, was given a frame of sealed honey, or else a couple of sections. To give this there was no need to open a hive. We merely pulled off the entrance-board, shoved the honey under the bottom-bars (how handy that 2-inch space under the bottom-bars comes at such a time), and then tacked on the entrance-board again, leaving the hive with its cover glued on just as it was in the fall, with its entrance of an inch square or less.

Ordinarily no further attention is given to the bees until the weather is warm enough for the first overhauling. But this year, after a month of such beastly weather had passed, we began to feel just a bit uneasy for fear some colonies might be running short. Right here is the place for those sisters who have 10-frame hives to congratulate themselves. With a 10-frame hive you can get in such a stock of stores in the fall that there can be no need to give the matter any thought till the harvest comes again. You cannot do that with 8-frame hives; and we have 8-frame hives.

So May 8 all hives were hefted. It's a back-breaking job to lift a lot of hives from their stands when a good share of them are very heavy. But there's no need to lift them all. When a hive feels as if nailed down, just pull on it hard enough to make sure it isn't too light, and let it go at that. The few that were suspiciously light were opened and had a frame of sealed honey given. In reality only one colony of the few was so short of stores as to be in immediate danger. That same day we overhauled the first 30 colonies, seeing whether a clipped queen was present in each hive, and noting conditions. When a comb was found nearly empty, it was exchanged for a sealed comb of honey. Then on the following days we kept on the same way till we had gone through the whole apiary.

Thus you will see that up to May 8 the covers were left sealed on just as they were in the fall. There was no need to open them then, only for the fact that there is always the possibility that one or more colonies may be queenless, and it is a pity to have queenless bees wasting their time in spring when they could help at rearing brood, either by being distributed among queen-right colonies or by the plan of uniting a queenless colony with a weak queen-right colony.

Some young sister may say, "But why don't you give a frame of brood to a queenless colony, and let it rear a queen?" Dear sister, when you're a little older you'll not think of having a queen reared by a lot of old, queenless bees. Neither will you think of rearing a good queen so early with any kind of bees.

There are some who would say that if we didn't allow the colonies to requeen themselves, but requeened each colony before the queen got old we wouldn't have any queenless colonies in spring. The fact is that a colony may be queenless which had a queen less than a year old.

Probably we never had a spring before when near the middle of May there was so little brood in the hive for the amount of bees. There must be some hustling if colonies are strong enough for the harvest. But then the harvest is likely to be late, if indeed there be any harvest, for white clover doesn't appear to be over-abundant. Will it yield when it does bloom?

Left with Farm and Bees.

Dear Miss Wilson:—Two years ago God called my husband home, and I was left with the care and responsibility of a farm. In connection with the farm I have my poultry and bees. This spring I have 32 colonies. I have been very much interested in them, and love them. I commenced with one colony. Sometimes when I read the glowing accounts of some of the bee-keepers and results, my experience would be very tame in comparison, for I am a learner. In this locality we have to keep our bees in the cellar so long. Mine winter well, and I guess I have more colonies than any other in this vicinity. I enjoy the American Bee Journal, and think I know many of its correspondents, and am proud of our bee-people, who exemplify so many of the characteristics of our fellow-worker, The Bee.

Emma S. Lane.

Newport, Vt., April 22.

Most bee-keepers have years of success, years of partial failure, and sometimes years of total failure, when the bees must be fed to keep them alive. Very likely your experience is much like the rest, and so not so very tame, after all. We all like to report our successes, and are not so anxious to tell about our failures, but they are usually there, just the same. However, bee-keepers, as a class are a bright, enthusiastic lot, failures are taken philosophically, and they get ready for and expect a big crop next time.

Canadian
Beedom

Conducted bv J. L. BYER, Mount Joy, Ont.

Backward Spring—Willow Bloom.

The prediction of many that we would have a very cold, backward spring, after such a mild winter, has been fulfilled with a vengeance. Three late springs now in succession, and the present one leads in that respect. May 26th, and no apple blossom out yet, and dandelion just at its best. However, the bees are not touching the dandelion during the past few days, because, forsooth, a more profuse secreter of nectar is in bloom—the large willows.

Speaking of this tree, reminds me to say that I know of no other source of nectar that a bee-keeper can provide for his bees in so short a time. The willow is a wonderful grower, and in a few years after being planted, it will bloom and yield nectar every day it is in bloom, provided the weather is warm enough for the bees to fly. It is a *wonderful* yielder of nectar too, and while the honey does not come as a surplus, yet it is of immense value in helping to build up the bees for a later flow.

Today I have been clipping queens at one of the yards, and the combs were simply crowded with fresh nectar to such an extent that it will be necessary to super a great many colonies for the apple-blossom, should the weather be fine. However, it is not apt to be fine, as we usually get rain about this time of the year, more or less—generally *more*.

For some reason—probably because of a very cold spell in latter part of April, as well as a shortage of pollen in the hives—brood-rearing came practically to a stop about April 30th, or a little earlier than that date. This was discovered when we started to clip some of the queens about 21 days after that date, and in going through 60 colonies not a single bee was seen emerging from the cells, although a lot of brood in the egg and larval stage was present. Bees generally are in good condition after all, and as the clover is late, the chances are that they will come into the harvest in grand condition. Some have reported shortage of stores, but in this section the opposite is the rule, and in my own yards I have not found a single colony that would not have had enough to carry them to the first of June, even though nothing came in from the fields.

Opposed to Early Spring Feeding in Cold Climate.

As most of the readers of the American Bee Journal are aware, the writer of these notes is opposed to early feeding in our cold climate, and the experience of another bad spring has made me more decided than ever on the question. Just at present I am asking myself what could have been gained by feeding even if it would have acted as a stimulant to brood-rearing, as the weather has been so cold that our main concern has been to see the bees kept in the hives as much as possible, and feeding certainly has a tendency to bring about the opposite to that. Then with *abundance* of good stores in the hive the bees simply turned a great quantity of honey into brood, and at this date, although the bees have had but a few days to gather pollen and honey, yet as has already been intimated, the majority of the colonies will need supers for the apple-blossom yet to come, in fact, some have supers on now and are crowded with bees. Some of these hives, by the way, are equal to about 15 Langstroth frames; and, strange to say, they are ready for the supers before the few 8-frame Langstroth hives are, that I have in the yard.

Clover is still looking fine as it was when I reported last month, so, as a consequence, the spirits of the bee-keepers are higher than is the case some years at this time. May we have no reason to get gloomy later on, is the wish of the writer.

Ontario Bee-Keeping Making Progress.

The interest that is being taken in bee-keeping here in Ontario, is well seen by the growth of the local county associations, of which there are a number in the Province. The Department of Agriculture is giving more encouragement to the industry than heretofore, and the bee-keepers are appreciative, as is shown by the number of resolutions passed this spring by these associations, thanking the Department for its good work.

It is noticeable, too, that the work of the Committees to gather statistics and suggest prices for the honey, is also coming in for a good deal of praise from the same source, and there is no question but that it is well deserved, as no other single factor has done more for the industry during the past few years than has this same Committee. This organization, as most readers will know, is a product of the Ontario Bee-Keepers' Association, and if that body had never done any other good act, it certainly is to be commended for this one. No question but that it has meant thousands of dollars to the bee-keepers of Ontario, in the matter of getting better prices—prices that are no more than just—for their honey.

Spring Loss of Bees by Outdoor Feeding.

Yesterday I was inspecting a yard of bees that are to be sold, and I was struck at finding them in a very weak condition—this in a season when there is almost universal good wintering. What puzzled me most, was that the hives were all clean, without a mark of dysentery, and there were no dead bees on the bottom-boards. This proved to me that the loss had not been in the winter, and yet they were all dwindled down to mere nuclei, the most of them not having over 3 frames of brood.

Naturally I began to inquire for the reason of their bad condition, and I could form no conclusion one way or the other, until one of the household remarked that they could not understand it, "because they had fed the bees honey outdoors ever since the snow went away, so that they would not starve." There I had the solution in a nutshell, for the bees had simply been enticed outdoors all this cold spring, only to perish, and, as result, all the old bees were gone, leaving only a few babies in the hives.

Long Cellar-Wintering.

Three different bee-keepers in Ontario have written me that they did not take their bees out of the cellar till May 5th, after having been inside for about 6 months. That is a long time for bees to be shut in, and as all of them say that the bees are in good shape, it speaks volumes for the cellar and the nature of the stores in the hives. My own bees that were in the cellar, were taken out April 1st, and I have an idea that they were better out than in the cellar so long. Although the weather was cold during April, when I examined them hastily on May 5th, a great lot of young bees were present, and the bees were in good shape. However, I do not pretend to know much about cellar-wintering, so for ought I can *prove* to the contrary, perhaps they would have been as well off in the cellar for another 4 weeks.

Wintering Bees—Introducing Queens.

During the past week I have attended two of the local conventions—York and Victoria counties—and at each there was a fair attendance with a whole lot of enthusiasm. At the latter convention, held at Lindsay, Mr. H. G. Sibbald was present, being sent by the Department of Agriculture. He gave two addresses, one on the wintering of bees, and the other on the introduction of queens. Both subjects were handled well, as might be expected of a bee-keeper of Mr. Sibbald's calibre. Space will not permit to give more than a few words as to what was said, but the main thing, as Mr. Sibbald sees it, that is essential for good wintering, is a good queen coupled with abundance of good winter stores. All who have studied the subject will agree with him.

On introduction of queens, Mr. Sibbald gave some of the quick methods as used by him in his apiaries. One of them is as follows: Hunt the queen out that is to be removed and put her in a wire cage on top of the frames. Then the queen that is to be introduced is laid on top of the same frames, too, and all left till evening. Now remove the old queen, and put the new queen in the cage from which the old queen has just been taken, and over the end of the opening fasten a piece of comb foundation. Place on the frames again, after punching a few small holes with a pin through the foundation over the opening. In a few hours the bees will gnaw through the foundation and release the queen.

I forgot to state that in changing the queens, he sometimes rubs the dead body of the old queen that has just been killed, over the outside of the cage she just came out of. Mr. Sibbald says it is a sure plan with him; and I might say that today I tried the scheme with 3 queens, so I hope to be able to report favorably next month.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Bountiful Rains in Texas.

The Texas bee-men are rejoicing over the bountiful rains that have fallen in nearly all parts of the South. There has been a long-continued drouth since last fall, with very little rain, and the usual spring honey crop has been a short one.

Everybody is looking forward to a bountiful summer harvest now, and it is very probable that such will come. The first blooming period of mesquite, in April, was very little. This has given the trees a long resting period. With the good rains the second blooming period, which comes in June or early July, ought to be an extra-heavy one.

The bees are in excellent shape in the most apiaries, and it is hoped that they will fill the hives to the full expectations of their keepers.

* * *

Cactus Blooms Destructive to Bees.

The following from Mr. Otto Sueltenfuss, of San Antonio, is of interest:

> "Have you ever noticed how destructive the prickly pear blossoms are to the bees? To-day I thought I would go and see if there were many bees working on prickly pear blossoms. I found them working on the blossoms busily. While standing near a large prickly pear bush and watching them I thought I would open a blossom that was already closed up, and through with blooming, and did so out of mere curiosity. And what do you think I found? The closed blossom had a dead bee in its embrace. Then I opened up more blossoms and found more dead bees inside of them. Then I thought I would open up an even 100, and in the 100 blossoms I opened I found 23 bees. Some of the blossoms contained 2 bees. Now anybody can easily figure out what an enormous drain that means on the bees in a locality where prickly pears abound."

Since receiving the above, several examinations were made of the blossoms near our apiaries, to ascertain if possible the cause and extent of the trouble.

Those of the North who are not familiar with extensive areas in the Southwest that are covered with the cactus, commonly known as "prickly pear," on account of the pear-shaped "leaves," which are really the thickened green stems of the plant, covered with very sharp spines, have little idea of the amount. When these are in bloom there are thousands upon thousands of large yellow flowers into which the bees go eagerly for the nectar which is abundant in the lower part of the flower. Often there can be found from 5 to 8 bees, all digging down among the stamens, of which there is a great cluster, and on account of which the nectar is hard to reach, unless the weather is so favorable that much nectar is secreted and it rises higher up in the blossom. Owing to the long drouth, it may be that the bees which I have observed, could not reach the nectar, and simply worried themselves to death in trying to do so. Many of the bees I found were so worked up about it that they paid no attention to any disturbances from the outside, and were so much fatigued and worried that they ran around as in a frenzy. Right in among these I found dead ones, often 2 in a blossom, long before it closed up.

Another observation at nearly sunset showed that in their eagerness to get some of this nectar, which they smell but can not reach, they remain in the blossoms while they close up for the night. Many bees even enter such blossoms when nearly closed already, and then are caught. I do not think that the nectar from these cacti is poisonous to the bees, although I have many times seen them after "loading up," run around in a frenzied manner as if they were intoxicated.

While the mortality in an apiary where these cacti abound may be great, yet as the blooming period comes just in a time when our bees are often near starvation, we may welcome them even if we lose some of the bees. One year cacti were the only thing which saved me from feeding barrels of sugar or letting the bees starve.

The honey is not very good, being amber in color and rank flavored. It is what I call "blubbery," very much like the sap of the thick green stems. We do not get enough of it to injure our good honey when we have an early flow, and the bees do not work on the cacti then.

* * *

A Texas Foul Brood Bulletin.

"The Foul Brood of Bees, and the Texas Foul Brood Law," by Prof. Glenn W. Herrick and E. E. Scholl, is a bulletin issued by the Department of Entomology of the Texas Experiment Station. It should be in the hands of every Texas bee-keeper.

While a great number of these bulletins have been mailed to bee-keepers, yet, since the mailing list of bee-keepers is incomplete, there are many who may not have received a copy. Such should address a postal to the Department of Entomology, at College Station, for a copy.

Attention to the importance of knowing about diseases of bees, more especially foul brood, has been called by me several times in these columns. Foul brood is very little thought about so long as it is not in one's apiary, and when it has made its appearance, it is generally too late to study up the subject. The greatest trouble lies in the fact that the disease is not discovered until it has played much havoc in the whole apiary. Especially is this true of the careless bee-keepers or the one with large numbers of colonies. The disease may not be discovered until some of the brood is actually decayed, or the colonies even dead. In many cases such hives are left alone, and robbers carry the disease from them to almost every colony in the apiary. Even neighboring apiaries are infected in this way, and an entire locality becomes a regular hotbed of foul-broody bees. Such is much more serious than most of our bee-keepers suppose. It makes bee-keeping quite uncertain and unprofitable, hence the subject should be studied carefully, even if foul brood never shows up.

In our inspection work we have learned of all kinds of experiences. Many a bee-keeper has unknowingly spread foul brood throughout his apiaries, by exchanging combs and hives of brood, bees and honey, not knowing the trouble existed in the earlier stages. We have seen apiary after apiary infected with foul brood just because the owners of the bees were not posted. Just such carelessness has caused the loss of thousands of dollars to the industry, and now, since we are able to learn about bee-diseases, how to avoid them, and how to care for them after they appear, there is no excuse for our not having studied the matter thoroughly. The time is now when every bee-keeper should know how to combat the diseases of his bees as well as the stock-raiser or any others.

Bees as Pollinators.

That the honey-bees are a great necessity for the proper fertilization of fruit and other blossoms, has been expounded time and again, and although a good many persons are familiar with this fact, it is quite necessary to call others' attention to the matter from time to time. The following is an example:

> It is quite evident that from the mention made in many of our agricultural journals we are awakening to the importance of bees in the orchard during blooming time. Farm and Ranch says: "Rear bees in connection with the orchard. You get honey and better fruit. Bees help fertilize the blossoms. Give the bees a chance and they will literally break the boughs of your trees with the weight of fruit."
>
> In this same connection, I had 4 plum trees that were bearing their second crop of fruit. The trees were well grown, and set a tremendous lot of fruit-buds. At blooming time the bees swarmed over these trees day after day. The result was that the trees set so many plums that the limbs broke to the ground. Consequently 3 of the trees are dead now and the fourth scarcely alive. I have 100 colonies of bees near this orchard.
>
> When I first began bee-keeping I was located 12 miles from my present home. When I came here there were no bees in the vicinity. There was a neighbor with a large orchard here, but his trees refused to bear fruit to any great extent. When I brought 100 colonies within a mile of the orchard, the trees began to bear. My neighbor told me the bees were a blessing to him, and made his orchard productive.
>
> Bartlett, Tex. T. P. Robinson.

Scarcity of Pollen and Condition of the Bees.

It is surprising what a difference there is in localities for bees only 12 to 14 miles apart, and that, too, with apparently the same honey-plants in each locality. To make it more easily understood what I mean, a visit to one of my out-yards for the purpose of feeding, if necessary, showed the bees to be strong and in good condition with most of them well supplied with old stores. We did some exchanging of combs to equalize stores, fed some 75 pounds of sugar syrup, and pronounced the yard safe from starvation until the first of June. This was the latter part of April. But to be sure that none should starve, I visited the yard again on May 15, and to my surprise and disappointment, 11 colonies had died of starvation, and may others were at the point of starvation, and at the same time bees near home were gathering enough for a living, and some new swarms were issuing. Of course, I am ashamed of this, but you know it is said, "An open confession is good for the soul," etc.

Owing to the long-continued drouth, bees have suffered in many localities over the State, and especially here, and a new trouble developed with the bees that I don't remember ever seeing or hearing of at the time of year—that is, a scarcity of pollen in April. I have good evidence that my bees away from the River suffered for pollen, and as a result many colonies that were well supplied with honey are to-day rather weak in bees on this account. Now that generous rains have fallen almost all over the State, we hope for better times, and are sure they will come, but fear, to take the State over, that the honey crop will be below the average.

A great many are very much disposed to neglect the bees when these discouraging times come, and some go so far as to sell their bees for less than the hives themselves cost, and I confess it is one of the very trying things on the nerves of even the veteran to have to feed the bees for weeks, and at times even months, to prevent actual starvation; but it has always paid me to do so, in the long run. I have been feeding some of my bees now for nearly 2 months, but we think the feeding a thing of the past now for this year, and I expect some new honey in the near future. I can't expect a full crop, however, owing to the poor condition of the bees, caused from lack of pollen, and starvation. L. B. Smith.

Rescue, Tex.

Bees Attack a Bee-Hive Hat.

> If the experience of one young lady may be taken as an example of what is likely to follow from the wearing of the hat known as the "bee-hive shape," the doom of that style of headgear is surely at hand.
>
> While sitting in Travis Park this morning Miss Daisy Whitlay of Kansas City, who is a guest at a local hotel, was startled to find herself beset about the head and face with a buzzing storm of bees.
>
> The bees had swarmed from a near-by hive and attracted by the shape and appearance of her hat, attempted to gather upon it.
>
> Miss Whitlay fought them off and ran from the place. Before she could escape, however, she had been stung in half a dozen places on the face, neck, and hands.—San Antonio Light.

Too bad the women will change styles in hats again. These changes are "kind of heavy" on the married bee-*men*. The late kinds of stylish things to adorn the heads of their better halves are expensive, but since the "bee-hive hat" came into style many a bee-man has partly rejoiced as he saw a future use for the investment made in one of these "head-gears." They can hardly be called hats any more, but the bee-keeper hesitated not to invest in the "bee-hive hat," for the reason that he had "his eye on it," as soon as it was to be discarded. It was then to find a place in his front-yard apiary as an ornament for displaying his best colony of golden bees. Many a bee-man would fain have a real old-fashioned straw-skep for ornamental purposes if it could be obtained without going across the waters for it. This desire the bee-hive hat might have filled, but it is going out of style again. It is too expensive for the above purpose unless the good wife gets her money's worth out of it first. Perhaps, when they are out of style, "bee-hive hats" will be sold out cheap. Then every one of us can afford at least one old-fashioned straw-skep in our bee-yard!

Cheap Capping Cans.

In answer to J. R. Bogart's question propounded in Dr. Miller's Department (page 373, 1908), as to the cheapest and easiest way to care for cappings in a small way by small producers of extracted honey, I will say that one can proceed in this manner and get along very well at small expense:

Go to your grocery store and get 3 or 4 50-pound lard cans—compound lard cans are better as they are larger—with both the regular outside cover and the summer cover. Take the summer cover and trim it down so that it will easily go into the can, and perforate it with 8-penny-nail holes. Now get 4 strong wires and make hooks on one end; then make 4 holes to fit the wires in the perforated tin, the holes to be equally distributed around the tin. Run the wires through to the hooks. Next flatten the wires at the other end, and bend them down, making hooks on the other end to fit over the top of the can. Cut the wires long enough to suspend the perforated summer cover about 5 inches from the bottom of the can, or 6 inches if you wish. The object of flattening the wire to make the top hooks is to accommodate the cover proper, which will readily slip down over the whole, eliminating robber-bees.

The next thing to do is to get a stick—a top-bar of a frame will do—drive an 8-penny nail through the center. Now take some strong twine and tie this stick, nail up, across the top of the can. You can tie it down to the handles of the can. The nail is to set the frame on while uncapping. Now you are ready to uncap.

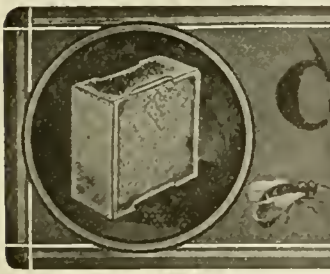
Uncap the can full, set it away to drain, and get a new can. If you wish these cappings to drain extra-well, take a long, sharp knife and cut them down to the perforated tin, some 5 or 6 times, just like slicing a pie, and they will drain out very well into the chamber below. When the cappings have drained 5 or 6 days they can be rendered in a solar wax-extractor, or all put out for the bees to clean up; or if you don't care for the remaining honey, wash them in a tub of water, then render into wax. This way is surely a success. Don't fear as to that, but the only trouble is that the cans are a little too small, and some of the cappings are likely to drop on the floor while uncapping. By moving the nail nearer one side, and allowing the cappings to drop in on the large side, you will get along very well. I never used any other kind of uncapping cans until my annual output was far above 20,000 pounds.

As to straining, I have used a very thin cloth, on the order of a bolting cloth, for the purpose. I make a hoop just a little larger than the top of a lard can, as above mentioned, and sew the cloth to the hoop, not too taut. Leave it loose enough so that it will sag about an inch or so in the middle. This strainer fits over the entire top of the can, and the honey is surely strained when run through it. I strained over 20,000 pounds thus, last season. I mount the extractor and run the honey direct from the gate of the extractor through the strainer and into the can. A person will get along very well with these strainers, if he had 2 or 3 of them, and with frequent washing them in a tub of water.

Should you try the cloth strainer, be sure to get a very hard-spun thread, for honey will not run through cloth made from fluffy-spun thread. A better strainer can be had by having your tinner make you one from very finely perforated tin, with holes about 1-64 in. in diameter, or the size of a common needle or an ordinary pin.

To fill jars with the honey, clean up the extractor, mount it, and pour it full of honey, and fill jars at the gate.

Bartlett, Tex. T. P. ROBINSON.



Contributed Articles

Non-Swarming Bees

BY C. P. DADANT.

There is a discussion of this question going on in the bee-papers. In Gleanings for May 1st, Dr. C. C. Miller cites Editor Kramer of the Swiss Bee Journal, as saying that the swarming propensity has been worked out of their strain of bees, in Switzerland, by selection among their native race, but that the Americans can never succeed much in this line "with the hot-blooded Italians." Editor Root did me the honor to ask my opinion in the matter, and I at once replied, stating that I thought the fault was not with the race. Since writing that article I have given the matter some thought, and it struck me that it would be advisable to make an enquiry into the opinion of the leaders as to the comparative tendency of each race of bees to swarm, so that we might ascertain whether one race is positively more prone to swarm than other races, and, if so, which race it is.

Personally, I have had a long experience with both common bees and pure Italians, as also with all grades of hybrids of these two races. We have very few swarms, owing to our management, but I cannot say that I ever noticed any difference between one race and the other, prolificness and management being equal. However, the opinion of the experienced writers ought to settle the matter.

Cheshire thinks the common bees "swarm less than the yellow races and adopt sections more readily." But on the other hand he hopes that by selection we may secure for them the "greater coolness and fecundity of the Italian." He speaks of the Carniolan as "prolific and industrious, gathers honey in large amount, but it is a free swarmer."

Cowan, the other leading writer among the English authors, states that the Italian "increases more rapidly, is ready for swarming earlier and gathers honey from plants which are not frequented by the blacks." Concerning the Carniolan he says that "their principal failing is a propensity for excessive swarming."

Dzierzon, who was perhaps the most judicious and attentive observer among apiarists during the Nineteenth Century, and who cultivated several different races, reports that the "Carniolan has great propensity to swarm," and that "even the common black or German bee may be divided into a honey-bee and a swarming-bee. The latter, which is also called the heath bee, in consequence of the management adopted, swarms continually."

Among the French writers, De Layens and Bonnier make no statement concerning the relative virtues of the Italian and common bees in swarming propensities, but they assert that "the Carniolan bees are very much disposed towards natural swarming, even when they are kept in very large hives."

Bertrand, in the southwestern part of Switzerland, has nothing to say of the Italians, but says that the Carniolans swarm much ("essaiment beaucoup").

In our own country, Quinby, one of the first to handle Italians on a large scale, says, "They begin to swarm 3 weeks before the natives, but gather pollen and rear brood with thrice the energy of the natives." He had not tried the Carniolans.

Hutchinson says that "the Carniolans have a tendency to spend their energies in breeding and swarming," but that "in each race there are strains showing different traits." This expression of opinion is confirmed, in a private letter to me, by Dr. C. C. Miller, in which he says that there are decidedly some strains in each race that have a greater propensity for swarming. This from his own experience.

E. R. Root's opinion, expressed in the "A B C and X Y Z of Bee-Culture," concerns only the Carniolans, and describes them as "excessive swarmers." Mr. Root, in his comment of this question, in Gleanings of May 1st, shows that he does not believe the excessive tendency to swarm is a trait of the Italians.

G. M. Doolittle, in a private letter to me, also picks out the Carniolan as the most prone to swarm above any other races, "especially," he says, "out of season, near the close of the white honey flow and between that and the fall flow." In his experience, taking the Golden Italians as the least inclined to swarm of any bees he has experience with, they grade as follows: Dark Italians, blacks, hybrids of these two races, Syrians, Caucasians, Cyprians, Carniolans, all other conditions being equal.

But here comes another writer who explains the cause of the excessive swarming of the Carniolans. Frank Benton, in his pamphlet, "The Honey-Bee," published by the U. S. Department of Agriculture in 1899, says:

"They (the Carniolans) are quite prolific, and if kept in small hives, such as have been popularized of late in the U. S., are somewhat more inclined to swarm than the other races introduced here. This tendency becomes more pronounced when they are taken into a country whose summers are hot, like ours, and their hives are not well shaded, as they have been bred for centuries, with only slight introduction of outside blood, in a climate where the summers are short and cool. Moreover, the practice in Carniola is to place the long, shallow hives used almost exclusively there, in bee-houses, and side by side, one above the other, with intervening air-spaces, so that at most only the front ends are exposed to the sun. This management, long-continued, has doubtless tended to develop and fix more or less permanently in this race certain characteristics which should be taken into account in their management elsewhere."

Mr. Benton has traveled probably more than any other apiarist, in the interest of bee-culture, and is therefore an authority on the races. The foreign authors I have quoted will also aid us in taking a general view of the subject which will be devoid of the partiality which any one of us is more or less imbued with, on account of judging entirely from local conditions. It is evident that we are not all agreed on these matters. Many of my readers who have experiences of their own with races of varying purity probably have also personal opinions on the point. Enough has been said, however, to convince any disinterested person that the matter of prevention of swarming does not depend upon any one race of bees.

Mr. Ed. Bertrand, of Switzerland, who like many others of the Swiss apiarists, does not find in the Italian bees as eminent qualities as we ascribe to this race, has ventured the opinion that each country possesses the race of bees which suits that country best. This is in line with the Darwinian idea of the "survival of the fittest," and is plausible. At any rate, Mr. Bertrand is too eminent and too careful an observer for us to disregard his opinions. Then we must bear in mind that America did not possess the honey-bee originally, since it came with the settlement by Europeans, and was called by the Indians "the white man's fly." So we cannot be said to have the honey-bee which suits our country best until we have given fair trial to all existing races. It is quite likely that the American honey-bee, which will perhaps be called "Apis mellifica Americana," will be a mixture of several races. But we can already feel certain that its nature will have to be curbed for several centuries before we can boast of non-swarming bees, long-tongued bees, etc. Swarming is the only method by which the honey-bee can propagate itself in natural circumstances, away from the hand of man, and for that reason we may be sure that it will be the last characteristic to become effaced in the race by careful management and selection.

Our friends across the Atlantic are producers of extracted honey, like myself. Like myself they use very large hives, perhaps not universally, but quite generally. They will therefore much more readily succeed in decreasing the swarming impulse than most of our American producers. But it must not be taken for granted that our Swiss friends are the only ones who succeed in preventing swarming. It is almost universal in those countries where large hives, the production of extracted honey, and house-apiaries or shelters, are used. In addition, their climate is much cooler, in the summer, than ours, as nearly all of Europe is north of the 40th degree of latitude, while almost the entire United States is south of the 45th. This fact alone would explain the greater success in the prevention of swarming in Europe, by artificial means.

A CORRECTION.

My last article, on page 177, has been made quite unintelligible in the beginning by a printer's error. I said, 7th line: "The royal jelly, so-called, is *now* known to be the same in composition as that given to the young worker-larvæ". The printer made me say: "The royal jelly, so-called, is *not* known," etc. Quite a different meaning.

Hamilton, Ill.

The Swarming Impulse and Its Control in the Apiary

BY RALPH BENTON

Assistant Entomologist, University of California

(Continued from page 176.)

Dividing by Hive-Stories.

Division approximately equal, some principles of which I have just been discussing, may be accomplished, I have said, in two ways. One way, and perhaps the simplest way, is to make the line of division between stories. Preparatory to such a division the strength of the colony should be assured and the queen permitted to lay in both stories to her fullest capacity. When the queen is found to be laying nicely in the top story a queen-excluding honey-board may be placed between the stories, confining the queen above. This will save time otherwise lost in having to locate the queen when division takes place.

When conditions are such as to warrant division, and the colony full of bees and brood, the top story with the queen should be raised up, and the lower story removed, and then the top story lowered upon the bottom-board on the old stand. This gives, it will be observed, the flight-bees, the original queen and the younger brood to the new colony on the old stand. The parent colony in the original brood-chamber retains most of the young bees and emerging brood, together with some of the older bees, and should be set up on a new and preferably remote stand in order to retain what old bees it happens to contain. A laying queen may be immediately caged for introduction, or the next evening either a virgin queen may be run in at the entrance, or a ripe cell inserted.

Much time will be saved and greater economy gained if division is not made until at least ripe cells are ready for distribution, although the parent and queenless portion of the divided colony, if it contains, or is given eggs or young larvæ, will provide themselves with a queen in time.

Dividing the Brood-Chamber.

An equal division may be more nearly approximated in the second way of dividing involving a division of the brood-chamber. As before, the brood-chamber is removed from the old stand and either the top story or an empty story set in its place. The old queen, then, with some of the older bees, together with the younger, unsealed brood, are set over into the new hive which, being placed on the old stand, is destined to receive the flight bees. The original brood-chamber with most of the bees in the colony at the time of division, chiefly young bees, and all of the emerging and sealed brood is set up on a remote stand in the apiary, preferably with a distinctive land-mark as a slanted bottom-board before the entrance.

It is to be noted that the original queen is left where the old bees are; that the working force of the colony is kept together on the old stand; and that there is a lull in the emergence of young bees in the new colony on the old stand in view of the fact that the emerging brood and sealed brood is retained in the old colony on the new stand, the effect being to retard and discourage the possibility of swarming where the original queen is kept. On the other hand, the old colony on the new stand has the younger bees and is rapidly reinforced from the emerging brood it contains. Further, this portion of the original colony being mainly composed of young and queenless bees is in the most ideal condition to receive a young queen or a ripe cell, or in the absence of either of these, to rear and care for queen-cells if it be given larvæ of the right age, providing its numbers warrant it, as might possibly be the case if the original colony had been a strong one. I have previously called attention, however, to the economy to be gained from having ripe cells or young queens previously reared, ready to be given the queenless partner to a colony division.

Dividing by Nuclei.

Another form of division is recognized when an equal division is not sought, but a purposeful unequal division accomplished by simply drawing off a nucleus from the parent colony. The underlying principle of this mode of division is a recognized one in apicultural practice. I refer to the principle of keeping the working force of a colony together as much as possible for the storing of honey, a principle not only behind this mode of division, but also the lines of procedure in the two final systems of handling the swarming problem to be discussed in the present paper.

In dividing on the nucleus plan, the queen and not over 2 frames of emerging brood with adhering bees are drawn off from the colony to be divided and set over into an empty hive to be placed on a new stand and destined to be built up gradually during the season to a full colony, much as any weak colony is built up for the honey harvest by timely and judicious enlarging of the brood-nest. The original colony on the old stand thus made queenless is treated much as previously outlined in the case of more equal dividing. A laying queen should be supplied it as speedily as possible, and plenty of storage-room should be given the bees for work to discourage swarming. This mode of division, in fact, is adaptable to requeening in the spring of the year, a modification being made in that as soon as the parent colony is supplied successfully with a laying queen, the old queen in the nucleus is disposed of, and instead of building up the nucleus into a full colony it is kept throughout the season as a full framed nucleus for the mating of additional queens for use in the apiary. This results in final effect to no net increase or but a very slight increase, only attained as several of the full-framed nuclei are united toward fall to make full colonies for wintering.

On the other hand, when young queens are available in large numbers this system may be followed up further and increase be made the main object. If this be the desired end, the colony as a honey colony is sacrificed and instead of drawing off simply one nucleus with the original queen, the parent colony say of 10 frames with as many more empty combs is divided into 4 or 5 approximately equal nuclei in full-sized hives, the original queen being left with the flight bees on the old stand. Each nucleus is then given preferably a ripe cell, or a virgin queen may be run in at the entrance toward night. The development of each nucleus is then jealously watched, robbing being guarded against and judicious enlargement of the brood-nest practiced as soon as the young queens organize sufficient brood to warrant its spread.

Should honey not be coming in fast enough in view of a dearth of a source of honey, or commonly because of the weak condition of the nuclei after division, feeding may be practiced, care always being taken to guard against possible robbing. The supplying to such nuclei of frames partly filled with sealed honey will perhaps be found to be a safer form of feeding than by actual feeding with syrup. From time to time such weak nuclei my be profitably strengthened with emerging brood in patches of the right size to insure breeding within the cluster, taken from stronger colonies.

Shaken Swarms.

The securing of increase or tiding bees through the swarming season by making what are called shaken swarms is a system, as I have said, applicable when the production of comb honey is sought. Having built one's colonies up to a crowded strength, just prior to the main honey-flow is the time selected for making shaken swarms. The weather should be warm and settled and a rapid flow of honey should be on—both desirable conditions for the producing of nice comb honey.

The colony to be shaken is set off the stand and the empty hive filled with frames containing nothing but narrow starters put in its place on the old stand. Then removing 3 or 4 frames from the center of the empty hive, the combs one after another from the parent colony are gently shaken in the empty hive by a jarring motion accomplished by striking the fleshy portion of the hands onto the end edges of the hive, the hands slipped palm inward along the end-bars to the rests of the top-bar. It is the aim to secure only the older bees. It will be found that the bees that have flown will shake off easily and that the young bees, not having command of their wings, will adhere more tenaciously to the combs and so escaping being shaken, will be thus left behind to brood and care for the developing bees of the parent colony, which otherwise might become chilled.

The parent colony is then removed and set up on a new stand. A super with full sheets of foundation in the sections—full sheets are always to be used in producing a fine grade of comb honey—never starters—or better still drawn sections, may then be placed on the new colony. A strong colony so prepared with no room to store honey below and with full sheets or drawn combs above, will in a good honey-flow fill the supers rapidly and finish sections cleanly in appearance. Under such circumstances usually good worker-combs will be built below; this will always be true if a young queen of the current year's rearing be in the colony.

The working force in this plan of division may be augmented as previously described by shifting the parent colony from one side to the other until entirely depleted in numbers. Where a limited amount of increase is desired, shaking 2 colonies into one may be practiced, thus getting three from two. If this plan is to be followed, one or both of the colonies should be made queenless, and, for a couple of days previous to shaking, should be gradually brought close beside each other. Just before shaking, the bees should be smoked thoroughly and jarred severely until they become demoralized. Peaceful union will be enhanced if the bees are sprinkled with thin syrup, or, if new honey is in the combs in abundance, the desired result is usually accomplished in shaking without resorting to such use of the syrup. If both colonies are queenless after the hive is put together, and before all is quiet, a virgin queen may be run in at the entrance, thus supplying the colony with a young queen, insuring good comb-building and further removing the possibility of swarming.

The Prevention of Swarming.

In the foregoing discussion of the various methods of natural and forced swarming I have alluded to certain methods of preventing swarming indirectly in that no increase results; but always it will be observed that this end has been accomplished through some form of swarming, be it natural or forced.

I come now to consider a system for the prevention of swarming in reality, both in process and results. This is something that many bee-keepers who do not desire increase are seeking for, and something which to the bee-master is relatively easy of accomplishment.

In the opening of this article, in speaking of the swarming impulse among bees, I presented five conditions tending to incite bees to swarm. With these five conditions in mind the prevention of swarming resolves itself into a rigid negation or preclusion of any one of these five conditions arising in any one of our colonies of bees. It must be understood that this statement does not refer to "remedial" swarming, but strictly to "preventive" swarming, namely, that it is not sufficient to apply a remedy to a colony when it begins to show active signs of preparation for swarming, but that all measures to be preventive are to be taken prior to any steps on the part of the bees to prepare directly for swarming. The first condition that I named as liable to induce swarming is an over-populous colony. By an over-populous colony I do not mean that the colony is actually too strong, for I never had a honey colony of bees too strong for me; but I mean that the colony in question is too populous for the space it occupies, leading to an over-heated condition of the hive, resulting in bees hanging out. To prevent this occurrence in a colony, room—and by room I mean empty space—should be given between the brood-chamber and the entrance. This can be done by raising the brood-chamber up and supplying the bees with a half-depth story containing starters or a full story with either starters or full sheets of foundation.

The second condition conducive to swarming is a lack of room for the storage of incoming honey. The preventive measure here is another top story, or the removal of honey if it is ripened and ready to come off, by extracting.

The third condition is an outgrowth of the second, and I have characterized it as an inhibited tendency to secrete wax. In giving the colony a ventilated story below we have provided some space for the building of comb, and further, in giving the bees more room for thes torage of honey, we have removed somewhat the factor leading to wax-secretion. A further chance for wax-secretion and comb-building may be given the colony by alternating in the top story sheets of foundation with the extracting combs, a system that may be profitably extended also in some instances to the brood-chamber.

The fourth condition is a restricted queen in ovipositing, which may be due to either an excess of brood in the colony, or a clogging of the brood-nest with honey or pollen, or both. Again, by an excess of brood in the colony I do not wish to be understood to mean actually too much brood in the colony, for a good share of the efforts of every bee-master, when a crop is assured, are directed to devising means for, and bringing about, every favorable condition practicable to promote the rearing of all the brood possible within every honey colony. I wish to be understood to mean an excess of brood for the size of the brood-chamber or space available for the queen to operate in; and the remedy is manifestly to give the queen more room to operate in—either a larger brood-chamber, or more room in the brood-chamber by setting up frames of unsealed brood, or by giving over to the queen an additional story for a brood apartment.

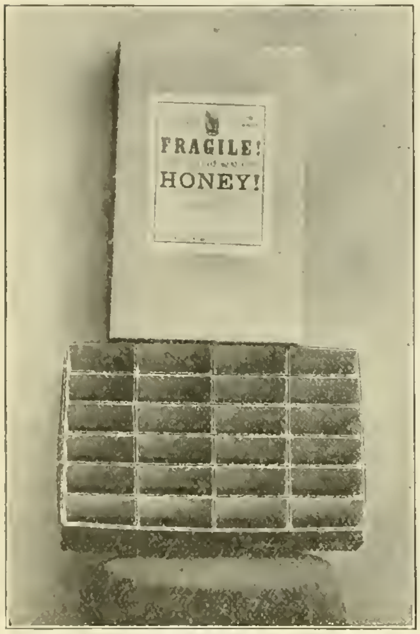
The fifth and last but none the less condition liable to increase the tendency to swarm is the presence in the colony of a queen of a previous year's rearing. I advocate the requeening of every honey colony as early in the spring as possible, with a queen of the current year's rearing, to be not only a necessity for the adequate control of swarming, but an essential of practice indigenous to the highest success in keeping bees for profit.

Crane's Improved Shipping-Case

BY J. E. CRANE.

The problem of shipping comb honey has always been one of considerable importance, it being one of the heaviest and at the same time one of the most fragile of rural products. I will not stop here to tell of the various devices used to prevent breakage. Suffice it to say, that they have all proved to some extent defective, or too cumbrous or expensive fully to meet the necessities of the case.

The packing of 6 or 8 small cases holding say 150 pounds of honey in a heavy crate with straw or other similar material to break the jar, and so arranged with handles as to be readily carried by two men is perhaps the best. Now if the freight should be 50 cents per hundred, and this extra crate with packing weighs 30 pounds more, the freight on this crate would be 12 cents, while the cost of lumber and the making of it would be, say 25 cents more, so that our cost of shipping honey would be from one-half to two-thirds more than in single cases. And add to these facts that these crates are of small value, or no value, for reshipping to the retail dealer, unless he wants the same number of small cases as in the large crate, so that we find wholesale dealers crating single cases to their retail customers. And here is where the greatest amount of breakage comes in when shipped from the wholesale dealer to the retail merchant.



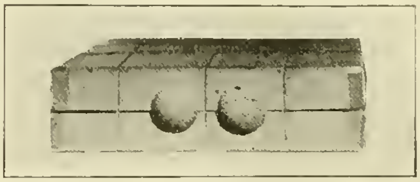
Crane Shipping-Case Open.

Carrying Crane Case.

After studying over the subject for some months I succeeded in assembling a case of corrugated paper that I thought might help us out somewhat, and later ordered 500 of the pattern made by myself. Now I am free to confess that while it had seemed to me for many years that corrugated paper would be a good material for a shipping-case, yet I had never thought one could be made strong enough to answer the purpose. What would happen should they be piled one on top of another, 10 or 12 deep, or if a box or other material should come against one and crush it and the honey in it? I found, however, that by the use of partitions a case would sustain a very heavy weight on top of it, and by using two thicknesses it was not likely to get jammed in at the ends or sides and the honey injured. Each partition also tended to break every jar or jolt, and largely increased the safety of the honey.

However much faith I had in my "improved case," it required a good deal of bravery on my part to fill the 500 paper cases with honey and think of committing them to the tender mercies of the railroads.

An accident as we were filling them, in which a case dropped nearly 3 feet (31 inches, to be accurate), to the floor without injury to a single comb, helped to reassure me. Determined to know the best as well as the worst of these cases, we shipped 10 with a lot of wooden cases to a customer some 200 miles away, where they would without doubt have to be changed from one car to another at least 3 times before reaching their destination. Our mind was relieved when we heard from our customer that while more or less combs were broken in every wooden case, not a single comb was broken where packed in our "improved case."



Crane Case With Glass.

Now, I do not wish to be understood that honey will not break in these cases, but that it is much, very much, safer than in wooden cases; so much so that dealers have been very willing to pay extra for the last two years for honey put up in these cases—enough more to reduce very materially the cost of the cases.

These cases, as we have used them, consist of a frame a little wider than our sections are tall, with a top and bottom that covers the sides and meeting in the middle, while a honey-dripping board goes on the bottom inside, of single-faced corrugated paper, and the inside filled with the partitions that support the top, bottom, sides, and ends, making the case very strong. We have held the top and bottom together with binding twine but are thinking of using paper or cloth stickers. I made some experiments last fall that would indicate that paper stickers would answer every purpose. I found that 2 pieces of strong paper 1½ inches wide, would support a weight of over 60 pounds. And yet we would not advise the use of paper until it has been fully tested. We know that binding twine is entirely satisfactory as well as inexpensive. The weight of these cases is only about half that of wooden cases with glass, thus saving freight from factory to bee-keeper, and also from the producer to market.

Crane Shipping-Case Closed.

One thing that I fear will prevent the rapid introduction of these cases, is that honey in them is not so attractive as in wooden cases, with one side of glass. No honey shows in them, and many persons will fear that their honey

Showing Strength of Crane Case.

will not sell unless it shows in the case. While I believe these fears are largely groundless, yet it may at first make some difference. I may say, however, that we Vermont bee-keepers have not been in the habit of using glass in our shipping-cases, or having any honey in sight for the past 15 or 20 years, and yet have not been able to supply the demand. That carriers may know what these cases contain we have always pasted a label on top, stating contents and asking for careful handling. We have used from one to two thousand of these cases with great satisfaction. We were unable to sell, to one wholesale dealer, honey in any other case the past year.

There is reason to believe the use of these cases will largely increase the use of comb honey, as with them it can be cheaply sent to small, out-of-the-way places where it would be impracticable to send the old style of case. So popular have these cases been with bee-keepers and dealers in honey, where known, that there is reason to believe that they will supersede the old style of wooden cases in the near future. Application for a patent has been made. Prices will probably be about the same as for wooden cases with glass.

Perhaps I should add that for those who desire glass in their cases of honey, these cases of paper can be made to take glass by cutting out holes in one side and inserting glass between the two layers of paper that make the shell of the case, thus showing all the honey necessary.

I send photo of a case as I have made it. This does not appear to weaken the case enough to do harm, and removes the objection to a case without glass.

How Far Do Bees Go For Honey?

BY G. M. DOOLITTLE.

"I am greatly interested in bee-keeping, have 2 books on the subject, and take the American Bee Journal. There is very little pasturage for my 42 colonies till the bees go a mile from home, then there is plenty of bee-pasturage for the next 4 or 5 miles in either direction. As I am so environed that I must stay where I am, it will be impossible for me to move to another locality. The bees have done quite well here; but I have been reading in one of my bee-books that bees rarely fly more than a mile to 1½ miles from home in search of honey, and from this I fear, if I increase them beyond what I now have, that I shall overstock my locality and have little or nothing in the way of honey above what the bees consume. I wanted to increase to 100 or 150 colonies, so I write to ask you if you will tell us through the columns of the American Bee Journal what you think I would better do—keep only those I have, or increase as I so much desire to do."

This is a subject which I have written quite a little upon, but as I see the statement again going the rounds of the papers that bees will not go more than 1½ miles to 2 miles from home for honey some even claiming that bees will perish and die for want of food within 3 miles of good pasture, it may not be amiss to say a few words again on the matter, and especially as I am requested so to do.

If bees went only 2 miles in search of food it would take but a limited conception to see that a very few colonies would overstock very many localities where now 100 to 200 colonies are kept. This matter of location used to worry me quite a little when I had from 25 to 40 colonies, and, especially so, as my success with these was so good that first one, then two, and the next year two more of my neighbors went into bee-keeping. The year the first two commenced they came to see me and asked me to help them start; and as I had been helped during my first bee-keeping years by Elisha Gallup, Moses Quinby, and N. N. Betsinger, I thought it only right that I should be as free to give, as I had freely received, so I helped them all I could.

When the next two wished to start, and asked my help, it came to me that Gallup lived in Iowa, Quinby 100 miles away, and Betsinger 12 miles off, so that by helping me they incurred no loss to themselves through a divided pasturage. But here were four of my neighbors, all within less than one mile of my apiary, and one of them joining lands with me, crazy over the bees, from the success I was having, and if I encouraged them, and helped them, they would without doubt soon have apiaries equaling mine as to numbers, and the whole of us would so overstock the pasturage that there would be nothing for any of us, and starvation for the whole lot of bees, unless we fed them, which would be wholly unprofitable for all concerned. It was a sleepless night that I passed, but with the morning, I resolved that, come what would, I would not let my neighbors know of my selfish thoughts, but would help them as others had helped me, even did it prove to my injury.

Lest I forget to touch these neighbors again, I will say that they increased their bees till one counted his at 43 colonies, another 70, another 60 odd, and the fourth 97, while 235 was the highest number I ever had. Many and many a time did we visit the apiaries of each other, and often all five of us make the rounds of the whole. Three of them still have bees, numbering their colonies from 20 to 50, while one, through extra cares, allowed his bees to go down and out.

Soon after the struggle of that night, as Mrs. D. and myself were starting home from church, which is 2½ miles from home, I began to see bees that were loaded apparently, flying with difficulty facing a quite strong south breeze, the church being north of my apiary. It was in time of teasel bloom, and the main teasel fields began one-half mile north of the church, and extended on still further north for 6 or more miles. The nearer we approached home, the more bees were slowly passing us, facing the stiff south breeze; and upon going into the apiary I found the bees dropping down in front of the hives heavily loaded with nectar from the teasel.

A bee that works on teasel gets her abdomen covered with a whitish dust at the tip, this dust growing less and less as it nears the thorax, something similar to the yellow dust on the bee that works in the blossoms of the pumpkin and squash, so that she is readily distinguished from bees that work on other bloom. And as the teasel commences to bloom about a week before basswood, and continues from a week to 10 days after basswood, we have a chance to know by this dust about how the teasel is yielding, and how the basswood is doing. When basswood is yielding so the nectar sparkles in the bloom, as is often the case when the air is charged with electricity, and the weather very hot, then very few bees are seen with dust on them. But in cooler weather, with little electricity, the teasel secretes nectar better, and the basswood less, when the majority of the bees entering the hives are covered with this teasel dust.

Knowing now that my bees were working at a rapid rate 3 or more miles from home, I felt much relieved as regards overstocking, and secretly chided myself for having thought of making a break with my neighbors because they wished to keep bees on my (?) pasturage.

Then the next year I had something which dealt a death blow to the 1½-mile theory, and set at rest in my mind all trouble from overstocking. Seven miles to the southeast of my apiary is a hill which is the highest point in our county, it being nearly 800 feet higher than where I reside. After a distance of one mile there is a gradual rise till the top of the hill is reached. There is from 10 days to 2 weeks difference in the time of all bloom on this hill (and especially basswood) and that at the apiary. After the basswood had been yielding nectar about the apiary for 2 weeks that year, I noticed, that, while the bees were at work as strong as ever, the bloom had all gone from the trees in sight about me, so I began to retrench about putting on more sections, as is usually the case when the honey-flow is likely to come to an end soon. But the end did not come, and as the bees soon became crowded for room I had to enlarge their sections again. This state of affairs kept on for a week, when I went to the first high point southeast from the apiary one afternoon when the breeze was from the northwest, I was astonished by the swarms of bees which were pressing toward the apiary from the hills with their loads of honey.

The next day I drove to the top of the hill and found the bloom on the basswood trees in that fresh, white state which all bee-keepers like to see in hot weather, knowing that when the trees have that whitish appearance they are in the best condition for nectar-secretion that can possibly be. And these trees were musical from the humming of the bees at work on the bloom.

On my return home I kept watch of the fading bloom, and at 4½ miles from the apiary there was no bloom but what was too far gone for the bees to work on. That year I had 28 days of continuous basswood nectar pouring into the hives, and have had other years where the yield was nearly as long drawn out. However, there is one thing I must note, which is, that if a continuous good yield is to be secured at this distance, it is necessary to have continuous good weather, for if 2 or 3 days of rainy weather, accompanied with cold or cool winds, should occur when the bloom had receded 4 or 5 miles, thus allowing the bloom to fail for a distance of a mile or so beyond where the bees had last gathered nectar, they would never go to the hilltop, be the honey ever so plenty there.

The solution seems to be that after the rain they go to the trees where they had last procured nectar, and finding none, nor any near by, conclude that the harvest is over, without going over the strip where the honey has failed to that which is beyond. From this, our correspondent and other readers will see that Doolittle would have no hesitancy in increasing bees in the home apiary from 100 to 200 colonies, as the desired number might be; and also that I believe that the 1½-mile-flight idea is also a fallacy.

Borodino, N. Y.

No. 6.—Colorado Bee-Keeping

BY R. C. AIKIN.

I closed article No. 5 with urging strong colonies for comb-honey production, and will repeat the same to start this one. That means that swarming must be kept down, if possible, and there is where we have to hustle.

If the reader has forgotten what I said in No. 3 about swarm control, let him turn to that article and re-read, especially the latter part. There I gave a sure method of swarm control, rather two plans that put the matter under absolute control so that one might know just what he was doing. On pages 57 and 58 of the same issue, wherein is printed my No. 3 article will be found one on the subject of swarm control by Mr. Charles Trout. He writes from California. Mr. Trout gives some good ideas, but in very many places they will not work. We have been for about 30 years talking about breeding out the swarming impulse. I got cured of that false idea about 20 years ago. Bees are going to follow instinct, and that elusive thing—or rather unexplainable thing—is influenced by conditions or environment. You can have bees bred for years without so much as a single swarm for many generations, and then just let the proper conditions prevail and they will swarm good and plenty, and disgust their owner who thought he had bred out the swarming impulse. The swarming impulse lies in conditions under which the colony finds itself, not in the blood of bees that have forgotten how. The *same* bees rarely ever swarm twice, so it is not a habit or anything learned or forgotten.

Mr. Trout speaks of 8 or 9 weeks before the flow having strong colonies, and of the proceeds of 2 queens for nearly 3 weeks, but we cannot have either in very much of Colorado, and I doubt if anywhere in the State. See what I have told along that line in article No. 5.

Mr. Trout tells us that "from 54 colonies run for comb honey I removed an average of 150 pounds of fancy comb honey. There were no swarms, and the season was very poor." Mr. T. starts queens 8 or 9 weeks before the flow. That is fine where it can be done and get good queens, and the cells are placed in nursery cages to develop until ripe. Let me quote again from Mr. Trout from the 4th paragraph, first column, on page 58:

> "When the virgins are about ready to hatch" [referring to those previously started and now in nursery cages], "I go through the apiary, giving combs of sealed honey wherever needed, and placing the queen above the excluder. Upon the virgins hatching they are allowed to run in at the entrances of the hives. This is about 5 weeks before the honey-flow."

Now, if the reader will turn to my article on page 52 of the same issue (Feb.), and see the two plans there given and compare them with this of Mr. Trout, you will see that I advocate much the same thing. If only I could have Mr. Trout's conditions I would change my directions somewhat, but I cannot have those queens to run in 5 weeks before the flow, and many times cannot have enough bees to utilize the queens if I were to buy them. His plan is fine where it can be worked, and he can depend on it almost every time under the conditions he gives as prevailing that year. I would warn beginners, and all who will be inclined to take too seriously his statements that his locality is a very poor one. I know enough about bees and honey-flows and localities to know that while his plan is a very good one where it can be applied, it does not account fully by any manner of means for that 150-pound yield of fancy comb honey. It is no ordinary locality, or season, when such an average as that can be obtained.

Notice again that he removes the brood from the brood-chamber, giving instead dry combs or foundation to *the young queen* and takes away the old one. Not only that, but he puts a super over this young queen with her dry combs or foundation, then above this the old brood. He does not say, but I infer that he keeps the queen-excluder down below the super just on top of the brood-nest—at least that is what I would do. Why, that would be almost certain to control swarming in any locality, you can depend on it for *a decidedly workable* RULE. I say "rule" advisedly; there are exceptional cases always, but it is my firm conviction that the plan given above will so nearly approach absolute control that it may be taken as a rule to tie to.

But your location and conditions may not admit of the full application of those principles (rather, I should say *plans*), but any reader will do well to get to the bottom of the facts or factors underlying so that you can clearly discern the whys for the results Mr. Trout obtained. I am putting much stress on this problem of swarm-control for it is vital, and when we get the *principles under our minds' control we are in position to control swarming* in almost any location, or under almost any conditions.

Again, about Mr. Trout's putting the super over that young queen with her dry combs or foundation—no doubt it is foundation when he runs for section honey, then the putting the mass of brood the colony has gotten up to this time above the super—this, too, needs analysis for very many readers, and especially for beginners, else they may make a bad break and say hard words of Mr. Trout and his plan. He tells us he removes that brood from above the sections when the flow starts, for note that the combination was made several days *before* the flow started, and the bees having been passing up and down through that super of sections they are ready to, and will, begin work there at once.

Now, that would be true with such colonies as he must now have as the result of many weeks' breeding with the old queen and supplemented by a young queen for "nearly 3 weeks," as he tells us. I remind you that he has unusually strong colonies, and his bees *must* of necessity go into that super, or get outside the hive to turn around. And not only has he strong colonies beyond what the most of us are able under ordinary conditions to obtain, but he has them of all ages, for note that they have been breeding quite freely for many weeks; he has simply a host of fielders as well as a superabundance of nurses or inside workers. If there is any honey to be had they get it, and if gotten there will surely be work in that super as well as in the brood-chamber. The only thing lacking to make a record-breaking yield and of fancy finish is good weather and abundance of nectar.

But suppose we have all these factors except a lack of nectar, then most of what the colony *does* get will go into that super all right, and there may be some very fair finished sections. Next take away a lot of his bees, reducing them to normal strength and not much flow—simply a normal colony and a moderate flow, and results will not be so good; and, again, with rainy days occasionally, or any other cause that may make the work intermittent, and results are still worse. So we may trace or analyze a little further down, and we may find what thousands upon thousands of bee-keepers all over our land are finding—hard to get the bees into the super at all; or, if there, they will not work in them, or they put all the honey into the brood-combs and crowd out the queen from her normal breeding and the forces of bees from their natural occupations. What else could we expect but that they will get in the notion of swarming, and hunt more congenial conditions in a new home?

Can you grasp these truths? Can you analyze the principles and put them into practice? Can you see that if you get results you must have conditions, and if those conditions do not come you must for yourself make them if you can? Mr. Trout has evidently time and conditions to get a host of bees ready for his flow, then he proceeds to put his colony into a condition—I say *he* puts them into a *condition* altogether against swarming by taking away the brood, and increases that condition by having a *young* queen with them, whereas most natural swarms have an old queen with them.

See that the advice I gave in No. 3, on page 52 for February, was, in one case, to remove all brood but one comb, and the queen, too. Such a plan would work fine in Mr. Trout's case. This puts the colony in a condition that the apiarist has absolute control, for he knows just what they will do in the matter of swarming for so many days; and then, by removing all cells but one before they begin to hatch, he has mastered the situation, for by that time there is no condition whatever to cause swarming until they have a laying queen, and brood in all stages, when the honey-flow is over and we have obtained the crop.

The other plan was to remove the queen but leave the brood on the old stand, then in 10 days remove all but one cell. In the first case the absence of all but one comb of brood would call for a mass of bees such as Mr. Trout had, literally a brood-chamber and one or more supers full of them so that they at once do a big business in storing. I say "at once," for this should not be done until the flow is already started: but such colonies will decrease daily in numbers with no brood hatching to keep up the death rate. But if the colony has not sufficient bees, and all the brood is left that thereby the colony may be gaining strength every day from hatching bees, and that the storage room in the brood-chamber be at a minimum so the super will be used, we are just using the same principle of control, but trying to intensify the storing capacity. The whole thing is to get the great mass of workers and hold them together for honey, and if a single colony does not have enough bees the end must be obtained in one of two ways:

We must double up forces from 2 or more hives till we have the necessary numbers, or we must contract the brood-chamber so that the weaker colony can use the super—or, more properly, are forced to use it if they do business in honey. But, in either case, to leave a queen with these colonies, that is, the big one in a normal brood-chamber, or the smaller one in a contracted chamber, brings about swarm conditions, and we lose control. We must absolutely put the colony into a *non-swarming condition first,* so as to eliminate that difficulty; then the next thing to do is to produce conditions favoring getting the stores where wanted and in the desired shape. That means work, and intelligent work, too.

Now go again to that page 52, and read the 3d paragraph beginning, "For those producing extracted honey," etc. There is given a third plan, but really first in order of record. It is to put the queen at the bottom with a minimum amount of brood, the excluder over her, and on that an extracting super of dry combs (even part combs, or foundation or starters will do), and above this put the bulk of the brood from the entire colony. Here we have the entire working force, queen, brood and all kept together, that is, on the same stand and in the same hive. But while the whole force is there, the brood being clear at the top, and so much space between it and the queen, with but little brood with the queen below, produces a *condition* in which the stores will go into that top chamber as fast as it comes in, or there are empty cells to receive it, and the dry combs next below it will be filled first after the top ones have no more room (or foundation or starters worked out if they have been given)—the last place to receive storage except for temporary or immediate use is the bottom body where the queen has been laying at will, and where the nurses and inside workers not needed to ripen, store and build comb above are kept busy.

But this plan is for extracted honey, and for reasons that are obvious not so workable in comb-honey production. For extracted it will get to the front and will give almost perfect control of swarming. If your queens are old, or poor layers at this time from any cause, an effort at supersedure would very likely result in swarming; this again shows the value of having all queens this side of their prime when a honey-flow is imminent or on.

So we see that it is the master who must *master;* if he have all things favorable he can do wonders, but when not favorable he must simply make the most he can out of the material at hand.

But some say when we clip queens or make these forced conditions we take away the energy of the colony, we produce an abnormal state of the colony and lose thereby. Nine-tenths of those who say so do not know the principles governing bees; do not understand at all bee-nature and general natural laws governing insects that do things because of environment and not from reason. No specific rules are applicable except as related to environment.

(Continued next month.)

Food for Queen and Worker Larvae

BY DR. C. C. MILLER.

On page 129 is an article by W. W. McNeal, some of which I do not understand; but if I understand correctly the main drift of the article, it is to the effect that young queens and workers receive the same kind of food while in the larval state, the only difference being that the queen receives a larger quantity than the worker. I think this is the first time that I have ever known any one to take this ground. Indeed, Mr. McNeal evidently understands that his view is against "the teachings of orthodoxy," for he starts out with the assertion that, "Careful research has failed to disclose any evidence to verify the teachings of orthodoxy relating to the food of a queen-larva."

I am not a scientist, and have made no researches relating to the matter other than the observations which any bee-keeper may make; but, Mr. McNeal, if you are going to take ground against all the authorities who have previously expressed themselves, don't you think you ought to give us some sort of proof of the correctness of your position? Please tell us *what* careful research has been made that has failed to verify the teachings of orthodoxy. Even if that be true, is there any evidence that quantity of food alone will make the difference between a worker and a queen.

But what about the researches of Planta and others, whose analyses show distinctly that after the third day the food of the worker-larva is quite changed in character, while the royal larva continues to be fed throughout with the same food it received during the first 3 days? So far as I know, this has been accepted as correct until the appearance of your article. Surely, you ought not to expect us to throw it all aside and accept your view without telling us what later research had failed to confirm previous research.

For the sake of the younger readers it may not be amiss to say what "the teachings of orthodoxy" are. Put in a very few words, a larva intended to become a queen is, after its first 3 days' existence as a larva, fed abundantly with a different food from that given to larvæ that are to become workers. Perhaps the average bee-keeper who holds this view would not be ready offhand to say whether he thinks the quality or the quantity of the food is the greater factor in the matter of queen-making.

There is no difference of opinion as to the food of the first 2 or 3 days. It is the same, whether fed in a queen-cell or a worker-cell, only a larger quantity is put in the queen-cell. Does that larger quantity make any difference? Without referring to the scientists, we common bee-keepers can answer that question pretty well. We know that a worker-larva, taken any time before it is 3 days old, can be made into a good queen. That seems to show that there is no difference between a worker-larva and a queen-larva during the first 3 days. During that 3 days the larva in the queen-cell has a greater quantity of food placed beside it, but that greater quantity can make no difference, since there is no difference.

After the first 3 days the worker-larva is weaned, that is, it has fed to it a coarser food, not so fully digested, while the food of the royal larva remains unchanged. That abundant feeding of a better food for the remaining time of some 3 days before sealing makes the difference between the worker and the queen. Is it the abundance of the food, or is it the quality that decides? More food is put in the queen-cell usually than the larva can consume, for we generally find quite a quantity of royal jelly remaining after the young queen emerges; indeed it would seem that the abundance of food given to a royal larva over and above the amount fed to a worker-larva mostly goes to waste, being left to dry up in the cell. As quantity of food made no difference in the first 3 days, and as most of the extra quantity during the remainder of the time is not consumed, does it not look as if quality had more to do with the matter than quantity? Indeed, if one should say that quality had everything to do in the case, and quantity nothing, it might be hard to disprove it.

I think there are many who will watch with interest for Mr. McNeal's proofs for his belief.

Where to Put Bait-Sections.

Generally I have given to each super a single bait-section, and that in the center of the super. Sometimes the bees have begun on a super toward the close of the season, filling some of the central sections half full or less, tapering out to raw foundation at the outside. These are given to the bees to empty out after the end of the flow, and a super of this kind is nicely baited to be given for the first super the next season.

While I have never, to any extent, given bait-sections other than in the center of the sections, I think I have sometimes advised, "If you have abundance of bait-sections, put one in each corner of the super." It stands to reason that if the bees begin at the corners, where they are the last at finishing, there ought to be more even work than if the start is made at the center. But sometimes our reasoning doesn't agree with that of the bees. Here is a letter from a man in whom I have much confidence:

> I notice in your answers to some questions in the American Bee Journal that you seem to be in some doubt as to the best place to put bait-sections in the supers. I had some experience last season that leads me to believe that the best place for them is in the center of the super. In some supers in others I put one in each corner and one I put one bait-section in each corner, and or two in the center. The baits in the corners seem to have the effect to divide the working force too much, drawing it away from the center where it naturally belongs. In some instances the bees would begin work on the baits in the corners, and then leave them and finish up the two sections with starters between the two baits on each side of the hive before finishing the corner baits. In some instances the corner baits were not finished at all. Some I found with no honey in them when the supers were taken off, while every other section was completed.
>
> After this I shall put my baits in the centers of the super, be they few or many, and leave the bees to do the work in the corners when they get ready. It is no great matter if there is some uncompleted work in the corners. The finishing can be done elsewhere. EDWIN BEVINS.

A pint of experience from a man like Mr. Bevins is worth more than a bushel of theory, and thanks are hereby given him for his letter. The center is the natural place to begin work in a super, and the unfinished sections at the outside can easily be assembled in another super and given to the bees to finish.

Marengo, Ill.

Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

Weather Extremes—Swarming.

It seems that it is either a feast or a famine in California, at least in a goodly portion of it. Take for instance the matter of rain. For the lack of this heavenly fluid, we are often thrown on the verge of a real famine; perhaps there would be a dearth of eatables if it were not for the fact that some of the river districts and those sections that can be irrigated from the melting of the perpetual snows in the high mountains, and produce abundantly of the good things of the earth, even in the dryest years. But what if two or three dry years should follow each other and there were no snowfall in the mountains? We have had such years and still there was water from the snow-springs up in or near the clouds, but of course not so plentiful as in years of abundant rainfall.

All this may be neither here nor there: the subject, however, was brought about by the fact that the winter and early spring was about one of the wettest we ever had. And yet looking back from these closing days of April, I can say the month was about the dryest we ever had. Rain is greatly needed to freshen the earth and invigorate all surface-rooted vegetation, for much of it is suffering for the need of sufficient moisture. And the month has been a hot one, too. Hay has gone soaring around $30 a ton; potatoes are $2 a hundred weight, and will be higher, as we of this State are being called upon to furnish the succulent tuber to that renowned "spud-country," Oregon. The crop in the latter State is said to have been a failure—how, I have not heard.

But while all these divers calamities worry the average agriculturist, the bee-keeper wears a more happy smile. The rain was sufficient without anything additional to guarantee a good growth of nectar-secreting plants. And the condition of the weather, at least for this portion of the State has been ideal. So, on the whole, we are looking for a big crop of honey. I can say that for the past 2 weeks my bees have been doing wonderfully well. Some of the colonies were in full swing over a fortnight ago; the first swarm issued Sunday, Apr. 11. A couple of days I had to be away and I believe a few swarms came forth, and I further believe, "lit out" for parts unknown. But when I am home it is a wise and cunning aggregation of bees that will get away from me. (And I have to confess that one swarm did get away, but I am inclined to the belief that it was a truant swarm that came to the apiary, lit well up in a tall tree during the noon hour, and while I was at lunch hied themselves away.)

The 19th was the "swarmiest" day I ever had to contend with; and I verily believe it was the warmest April day that I ever had to swelter in. Talk about fun! Fun with a vengeance! On our place there is much to do. We have a sort of general fruit-farm, garden, and I might say, the Lord knows what not, but I won't. And yet it is a pretty place, and an interesting one. So with all the things to look after and do, it is no small task to play second fiddle to the bees. And how they hummed, and buzzed, and cavorted that day; and they commenced bright and early, as they early divined what the day was to be. Everything went along well enough so long as one swarm came out and got settled and fairly hived, before the next one came upon the scene. But along toward noon, they came forth fast and thick, and the fun or deviltry began. But fortunately none of them were of stinging mood, so I did not mind it so much. It was the heat and the anxiety to keep those swarms separate that bothered me.

And funny things happened. I had one big swarm nearly hived beneath the cherry-tree it alighted upon, when out came a swarm from a large 3-story hive. I saw what a pickle I'd be in if those two came together, I had the half-hived colony on a large cloth, so I folded it over the hive. But those bees began to pile upon the cloth and many were crawling through the folds, when I gathered the outfit up and placed it to a permanent stand in the apiary. I paid no further attention to this latter swarm for a half hour when I went over to see about hiving it. I imagined the bees were somewhere in the branches of the tree. But nary a bee was there. But I saw some bees flying about beneath the tree, and some hovered near an old bucket that was formerly a coal-oil can. Lo! and behold, if my swarm had not entered the can and seemed to be as happy as a clam at high tide. And such a snap it was for me to hive it. I stepped over, took hold of the pail's bail and walked off with a big bucket full of live bees. I sat it on top of a hive for a few minutes, secured my camera, and while they looked their prettiest, (unfortunately mostly within the can,) I took their picture. I am sorry I can't show it to you, for 'tis yet undeveloped. Well, it was a mere "pudding" to get that pail full of bees into a hive I prepared for them right on the stand they were to occupy thenceforth. Swarming would be an easy matter if all bees had such horse-sense!

Then, another time, when I was operating on a colony, to relieve it of a bad case of "toomanyqueencells," out of a hive close by began to come a swarm. My head began to swim, figuratively, for it seemed that swarms were in the air, and swarms were everywhere. But my wits did not forsake me, nevertheless. My first impulse was to nab the queen as she came forth. (I have not practiced queen-wing-clipping these many years, though when I did it was made an easy road to this matter of capturing swarms).

Well, as I was about to remark, the queen was just a fraction of a second too previous to me; I saw her take wing before my fingers could get half way to where I saw her at the edge of the alighting board. Then, I grabbed a piece of a shingle near by and jammed it into the entrance. Most of my hives have entrances only ⅜ of an inch high and from 6 to 12 inches long. The shingle only contracted the entrance and but few bees could get out at a time. Then I blew in quite a lot of smoke—

more than I should otherwise. Then I removed the shingle. The result of all this work, which was done in about a minute, was that that swarm did not get busy in the air that day; it just clustered on the front of the hive for an hour or so, and then resumed the even tenor of its way. Just imagine the time I would have had if that swarm commenced to alight among the bees of the colony I was manipulating! No patent; help yourself. Never mind the thanks.

What I have so imperfectly narrated above is but a fraction of the work I had to do this one hot day in April. Several days later—the last day of the month—was another hot day, but I had only one swarm to deal with.

Here I will state that I have been fortunate during my long course of bee-keeping to keep down swarming to a minimum—some years getting none whatever. Early in the season I make what divisions I care to have, and manage so as to have these new colonies as strong as any in the apiary by the advent of the main honey-flow, which is about the time swarming is usually expected. This year I found that some of these new colonies I prepared got so strong that some of them cast swarms as soon as some of the colonies that had not been divided.

As a contrast to the summery weather we have been having, I can not help but make note of the other extreme that is prevailing at this writing, in the East and Middle West, for I notice that the papers are full of accounts of blizzards, snow storms, and killing frosts that have prevailed there, while we were wearing summer clothing. But as comparisons are said to be odious, I forbear to make further remarks on this subject.

Benton's Bee-Bill Beaten.

The bill framed by Mr. Ralph Benton, of the University of California, for the purposes set forth by him in the April number of the American Bee Journal, died "a-borning" in the hands of the committee of the branch of the Legislature in which it was introduced. This is something of a disappointment to that energetic young gentleman. He spent much time, energy and money in getting the proposed bill in shape, and getting it before various meetings of California bee-keepers for their approval. In this way he received much valuable information and many timely suggestions as to what our bee-keepers need most in bee-disease legislation. I am afraid that the fact that the proposed hill seemed to savor of being another of those University measures that are every once in a while sprung on the people, helped kill it. It would be well, I think, to get at the proposed plan in another way. Have a good bee-disease law drafted and adopted. The matter of placing certain powers in connection therewith could be made a part of another provision to be framed, or as an amendment to some bill now in force, whereby the entomological department of the University of California, or say, the Experiment Station of said University, would be constituted the pathologist of the bee-disease inspectors, with increased pay for such additional work, if need be.

As the matter stands I am sorry that the bill was not adopted, for as I have heretofore stated, I should like to see how it would work.

Here I will state in answer to Mr. Benton's article in the April issue of this paper, that when I saw the bill, it was much different from the way it was sent to Sacramento; that my remarks were aimed at the bill as I saw it, and I still believe that my remarks were timely and to the point, and I am sure Mr. Benton will agree with me. But the matter is dead now, so let it rest in peace.

Monterey County Bee-Keeping.

A good many have been inquiring about Monterey county as a profitable place to locate an apiary. Personally I know little of the county, but I have heard much of its wonderful resources. The coast-line of the county is partly on the Pacific ocean and partly on Monterey bay; thus it has a cool but not cold climate on the west, and in the interior it is very hot during the summer and early fall. At the bee-institute in the quaint little city of Monterey at the close of last year, I had the pleasure of meeting a number of the progressive apiarists of that county. In a letter I had from Mr. Vernon Townsend, the tall "eucalyptus" of Soledad, that gentleman gives such a faithful outline of his beginnings in bee-culture and his remarkable success since he pitched his tent and "planted" his bees in Monterey county, that I reproduce the major portion of it here for the benefit of the readers of the American Bee Journal. I might state that a fairly faithful representation of the athletic figure of Mr. Townsend may be seen in the February number of this paper; a view of his apiary is shown here.

Apiary of Vernon Townsend, Soledad, Cal.

This is what Mr. Townsend modestly says of his bee-keeping:

I am a native of Australia. I came to this country 12 years ago, intending simply to have a trip through America and return to Australia, but on seeing a large apiary in Santa Barbara county, I got so taken with the business that I decided to learn it and start for myself. I worked with some of the largest bee-men in Santa Barbara, Ventura, and Kings counties, to learn the practical work and different methods, and 4 years after coming to the country, I bought 200 colonies of bees, and located in the Santa Ynez Mountains, back of Santa Barbara. The 3 seasons I was there were very bad, each dryer than the preceding one, and I produced no honey at all. So I got discouraged of ever doing much there. I then moved up into Santa Cruz county, back from the Coast. I stayed there 2 seasons, but the bees did poorly, as the fogs and cold weather prevented them from doing much work in the spring when there was abundance of bloom on everything—sage, buckeye, manzanita, madrone, holly, cascara, and several other blooms—and by the time the weather did get warm enough, everything was through blooming.

Three years ago, I came down here, after looking over the northern part of the State, even as far up as Klamath. I came here with 150 colonies of bees, produced 10 tons of honey that year, and increased to 200 colonies. The next season I produced 25 tons and increased to 300 colonies. In 1908 I produced 5 tons, and did not increase at all. I think one can produce some honey every year in this section, and I think in the very worst of years the bees would make a living, although we would never make as much as they do down South in the very best of seasons. Still I think one would average better taking one year with another here.

There is really a better bee-country back from King City, and over towards Coalinga, but there are several men in the business there. Here I have no one to conflict with, and eventually hope to have a long string of apiaries. There are larger patches of sage in that country above King City, and more bees could be managed in one yard. They also get more rain there. But when it is a dry season they have no fogs to help them out, as no fog ever gets up as far as that. Here we get fogs all through the spring, as late as July, which drift up at night and clean down the valley toward Salinas, about daylight in the morning. These fogs freshen up the bloom most wonderfully.

I am really only just beginning in the bee-business. I have had much bad luck as the above shows, but as I am only 34 years old, I think I am good for a few years yet, and am just as enthusiastic as I ever was.

VERNON TOWNSEND.

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Sticking Labels on Tin.

How do you stick labels on tin cans? I don't seem to be able to make them stick.

Minnesota.

Answer.—The favorite way is to have the label pass clear around the can and overlap, in which case any common paste will answer. I'm not sure about it, but I think flour paste with cold water sticks to tin.

Granulated Combs of Honey.

Please advise me what to do with a lot of clean, straight 8-frame hives that have all the honey in the combs granulated. Only part of each frame is full. The rest is empty cells. Will this granulated honey be a waste? Will the bees use it up? They weigh from 15 to 40 pounds for each colony. Will it do to hive swarms on these granulated combs.

New York.

Answer.—Spray the combs with water, preferably warm, and give them to the bees. When they are cleaned out dry, spray them again until all is cleaned up. If there are no neighbors' bees to share the spoils, you can make a quicker job of it by setting the frames out where the bees can rob them out. They will be all right to give to swarms, only there will be waste if the candied honey is not wet, and you can not well wet the combs after the queen lays in them.

What Became of the Queen?

Why did one of my colonies of bees go wrong? I doubled a light one, or set a light one on a medium heavy one when putting them out of the cellar in the spring. The lower hive had a queen. She went up into the top hive and made a lot of brood, also in the lower hive. It appeared to be the strongest colony I had. I went to it the other day to get a frame of brood to test another colony, but was surprised to find no brood nor eggs nor any signs of a queen. They are starting a queen-cell on the brood I put in. Will it make a satisfactory queen? The cell is not very large.

Iowa.

Answer.—If I understand correctly, you found plenty of brood in both hives after they were put together, so that it appears the queen was all right for some time after the uniting. It is possible that at the time you looked to find this brood, you may have accidentally killed the queen in shoving the frames together. Not very likely, however. It is possible that after you closed the hive the bees took offense and balled the queen, killing her. Some object to much opening of hives in spring on this account. It is also possible that the queen just naturally played out and the bees were trying to supersede her. Queens generally play out at or about the close of harvest, but sometimes in spring. The queen they rear may turn out good, but generally a queen reared so early is bad.

Taming Cross Bees.

1. I have a colony of bees that are very cross, and one that is very tame. How could I introduce a queen from the tame colony to the cross one so as to make them all tame? And at what time ought I do it?

2. As I am a beginner I would like to have your opinion as to whether the chaff hives are better than the single-board hive?

Ohio.

Answer.—1. Rear a queen from the better stock, kill the objectionable queen, and introduce the new queen in an introducing cage. Or you may do another way. Take 2 or 3 frames of brood from the good colony, put them in an empty hive, fill out with empty combs or frames filled with foundation, and set this on the stand of the bad colony, moving the bad colony to a new place close by. Now lift out 2 or 3 frames from the bad colony (be sure you don't get the queen), and shake the bees from these frames into your new hive, returning to the bad colony its 2 frames of brood. In something like 2 weeks there ought to be a queen laying in your new hive. You can strengthen it by adding brood and bees from the bad hive, or you can unite with it all of the bees and brood, killing the bad queen 2 or 3 days before uniting. Perhaps you would like to have 2 colonies instead of one. In that case kill the bad queen a week after the first move, and 2 or 3 days later exchange one of the 2 frames in your new hive for one of the frames in the bad hive, making sure there is a cell on the frame, and also on the frame you leave.

2. Nowadays the tendency seems rather toward the single-walled hive, with protection for outdoor wintering.

Cyprian Queens.

Where can one get Cyprian queens?

Illinois.

Answer.—I don't know. If any one has them for sale, one would think an advertisement of them would appear by the time this gets into print.

Two Queens in One Hive.

To increase a colony more rapidly, would it be possible for me to put 2 queens, each having a 2-frame nucleus, with a division-board between, in one hive, and later, as the queens filled their frames with brood, take away one of the queens, and by thus doing, unite the two?

A Subscriber.

Answer.—If I understand, your idea is to have two queens at work while the colony is weak so that you may the sooner have a strong colony. It won't work. The two nuclei with two frames of brood each will not build up as fast as one queen with four frames of brood. For a single queen can lay eggs faster than they can be cared for by the bees until the colony is strong enough to cover a good deal more than four combs. Some queens can keep 12 to 15 frames of brood going.

Foul Brood — Winter Size of Hive-Entrance—Bees Stinging Some People.

1. Ought I to use brood-frames which contain perfect combs, i. e., those showing no signs of foul brood, if purchased in a lot of hives, part of which I suspected were infected?

2. Would there be danger of introducing foul brood from using the supers from these hives containing the sections?

3. Would it make any difference if empty comb were built in the sections, no cells containing honey.

4. What size entrance for wintering do you consider best for an average colony in an 8-frame well-protected hive wintered out-of-doors where the thermometer ranges from 12 degrees below to 55 degrees above?

5. Would it be better to clear the snow from the entrance after each storm that blocks it, or leave the snow and clear only when there is danger of the hive becoming sealed by ice or sleet storms?

6. Do your bees know the difference between you and another person when they are in a stinging mood, neither person having angered them?

7. Are there persons whom bees seem to hate worse than an average person?

8. If so, can you give any reason for it?

Maine.

Answers.—1. There is danger. Don't use them unless you keep close watch.

2. I'm not sure there's any danger; certainly very little.

3. That would probably make no difference. And yet foul brood is such a dangerous thing to have anything to do with that I would hardly want to have in my apiary a bee journal containing an article on foul brood.

4. Views differ; perhaps 4 inches by ⅜.

5. It may be as well to leave it, so long as the air can work its way freely through the snow. Yet if the snow be very deep, some have reported trouble from too great warmth.

6. I don't suppose they do.

7. Yes.

8. Like enough the difference in odor. Some people have an odor that you can smell. Bees may have such a sharp smell that they can smell odors imperceptible to you, and the odor of some people may be very objectionable to them.

Getting Honey to Granulate.

Under what conditions can extracted honey be most quickly crystallized, or candied, so that it can be sold in paper packages? I am not engaged in bee-keeping, and haven't much literature on the subject.

California.

Answer.—In Europe, where there is more desire to have honey granulate than here, they stir the honey occasionally. Mixing a little granulated honey with the liquid also helps. There is a great difference in the kinds of honey. Some honey begins to granulate as soon as extracted, while other honey may remain liquid a year or more.

Rearing Queens—Caucasian Bees.

I have held back long enough. I must out with it and ask a question about rearing queens. I have been working with bees now for 4 years and have 25 colonies. I have spent a good deal buying books about rearing queens, but have never reared a queen. Now no doubt all small dealers would like to know what I am about to ask, that is, how to rear a few queens for home use, without having to transfer larvæ or working with cell-cups, and so on. I believe I will put my question in this form—I will outline a plan given to me by a friend which I tried but failed.

1. I am using the Hand sectional hive. He told me to take a strong colony, put most of the brood above an excluder, and after 10 days take the lower part of the hive to a new stand. Now prepare some little sticks of wood ⅝ of an inch square by 2 inches long; tack a little piece of tin across the end so as to hang them in a frame prepared for them. In this way instead of a top-bar tack some little thin pieces say half-inch wide, on each side of the end-bars, so as to form a top-bar having an open space to hang the blocks of wood in. Now take from the hive you want to breed from a piece of comb containing eggs, split this comb up in a little pieces that will contain one or more eggs. Having your knife sharp, and warmed over a lamp, trim the cells so they will be shallow. Now with some melted wax stick these little pieces on the end of the blocks of wood, and hang them in the frame. Now go to this prepared hive, take out one side-frame so you can spread the frames in the center, then hang in the frame with the eggs on the blocks, seeing first that there are no queen-cells started. In 16 days you will have queen-cells.

Now, what do you think of this plan? If they would use them and make cells it seems to me it would be a nice and easy way to handle them, one could handle them on the sticks very easily, or they could be protected by a cell-protector and introduced where you want them. Do you see any serious fault with this plan?

I have your plan given in the Journal of June 20, 1907; I cut it out, as I thought it was the simplest plan I ever saw.

2. I read the piece, "Good Caucasians," in the last Journal. Now it has just fired me up again to Caucasian all my colonies. I have bought one Caucasian queen. It seems to be the most active colony that I have — the only one that has swarmed; they all went

back into the hives. I gave them a super and they have gone to work. Would you advise me to rear queens from this one, or buy full-blooded ones? Of course the queens I would rear from this one would be only half-breeds, as they would mate with drones that they chanced to meet. VIRGINIA.

ANSWERS.—1. At the risk of being accused of getting in an advertisement here, I cannot help wishing you had got a copy of my book "Forty Years Among the Bees," and followed the plan there given. Still, on page 551 of the number you mention is a succinct statement of the plan, which I advise you to follow. The plan you outline may work out all right, but the plan I give is, I think, simpler, and I suspect you will be more successful with it. There is a point, however, that should be mentioned. You are told to give a frame with one or two small starters to your best queen, in order to get a frame of virgin comb with eggs and young brood to be used to get good queen-cells. If your best queen is in a strong colony it is likely that a large part of the comb built will be drone-comb, possibly all drone-comb, and you can rear good queens from drone-comb. To make sure of worker-brood, let the frame be filled with worker-foundation. A better way, however, is to keep your best queen not in a strong colony, but a colony or nucleus having only 2 or 3 frames of brood. Then the bees will build all worker-comb with small starters. Another reason I keep my best in a weak colony is that she may live as long as possible, for in a strong colony she will wear out sooner than in a nucleus. My best queen, so far as I now know, was reared in 1906, and her colony will not be expected to produce any honey this year, for I want her to live till next year if she will be so obliging. Of course, I may not want to use her another year, for I may happen to have a better queen then.

2. It will be perhaps just as yell to rear queens from the Caucasian queen you have, for even if you get all pure queens you will have mixed stock in a year or so. Then if you decide you want to keep the Caucasian stock you can get a new queen another year. It may be well for you not to be in too great haste about deciding as to the merits of Caucasians, so long as views regarding them are so conflicting.

Getting Straight Combs.

How do you get straight combs built? Last year I used full sheets of foundation. The frames were wired with 4 horizontal wires. Almost every one "buckled" between the wires, and they are a bad lot of combs. KANSAS.

ANSWER.—I wonder if you didn't depend entirely on the wires. The foundation should be fastened securely to the top-bar, either by means of the kerf and wedge, or what some think better in a very dry climate, waxing the foundation to the top-bar, that is, running melted wax along the edge of the foundation on the top-bar. But you will probably have less sagging of foundation if you use foundation splints that have been heretofore described in these columns, as well as in the book "Forty Years Among the Bees."

Porter Bee-Escapes—Killing Bees in Manipulating—Honey from Box-Hives Into Sections.

1. Will queens and drones pass easily through the Porter bee-escape?

2. Does the Porter bee-escape often get clogged up with bees trying to carry out dead bees, larvae, etc.?

3. I can not yet avoid killing from one to 12 or more bees at each opening and closing of hives. About what is the average number of bees killed at each manipulation by the average experienced bee-keeper with say 100 colonies?

4. What is the color of locust honey?

5. On a Friday 2 swarms came out together and formed one cluster. I prepared 2 hives and put a frame of eggs in each. I divided the cluster between those 2 hives and each got a queen the following Sunday morning. The bees in one of the hives dragged out the queen nearly dead. I rescued her, and whilst in my hand she deposited an egg, so she was the old queen (one of the swarms was an afterswarm). The swarm then started queen-cells. Why was the queen killed after she had been with the swarm two days?

6. Is there any plan whereby the bees can be induced to transfer the honey out of a box-hive into sections? CALIFORNIA.

ANSWERS.—1. Yes; although not quite so easily as workers.

2. Yes, although there is not much chance for it. Dead bees are not likely to be in supers, neither is brood often present.

3. Not easy to say. By being very careful one might manipulate 100 colonies without killing a bee. But it hardly pays to go so slow as that. Perhaps 100 bees would be killed in the whole lot. But that's only guessing.

4. I don't know.

5. It is not so very uncommon to find bees hostile to a queen and yet not actually kill her for 2 days, or even a week.

6. I think some have claimed to succeed by setting the hive over the sections until well occupied with bees, and then setting the box-hive away some distance with the entrance large enough for only one bee at a time. I never made a great success at it.

Sweet Clover Not White Clover.

In reading American papers, I observe frequent references to sweet clover as a plant for bee-pasturage. Is it the same as white clover (trifolium repens perenne) which is the staple bee-pasturage here during the summer months. NEW ZEALAND.

ANSWER.—Oh, no, it's an entirely different thing, growing sometimes to the height of 8 or 9 feet, although 3 or 4 feet is a more common growth. The most common sweet clover is *melilotus alba*. It is a biennial, coming from the seed one year, blossoming the next, and then dying root and branch. I don't know how much more nectar an acre of sweet clover would yield than an acre of white clover, but should guess at least 5 times as much. Even if bees have all they can do on white clover, sweet clover is valuable, because while it begins bloom later than white clover it continues much later, even till frost.

There is a yellow sweet clover which blooms 3 weeks earlier than the white. Sweet clover will grow where scarcely anything else will, as in a clay bank. It seems to flourish best, or at least to start from the seed best, on hard ground trodden by farm stock.

Queen-Cell Cups and Swarming—Washing the Extractor—Smoking Bees.

1. In manipulating my colonies this spring, swarming has received more than usual attention, and this question has presented itself quite often: Does the presence of queen-cell cups without eggs or brood always indicate a desire to swarm?

2. How long may an extractor remain without washing? That is, how long may the extractings be apart without injuring anything.

3. In Gleanings, page 250, E. D. Townsend says that when the bees get stirred up and a good many of them in the air, "we alternate between smoking the bees in the air and those in the hive until most of the flying ones have settled down." Now, how does he smoke the bees in the air? It seems to me one might smoke quite a little while without getting much results. Do *you* smoke those in the air? CALIFORNIA.

ANSWER.—1. No.

2. I don't know. I think in some cases harm might be done by leaving an extractor daubed for 24 hours. I know that in some cases a week or more will do no harm. Perhaps the kind of honey or the condition of the atmosphere makes a difference.

3. Yes, I've smoked bees in the air. When a cloud of cross bees surrounds you, charge upon them with a heavy smoke, and you will find it helps.

Swarm Management — Best Bee-Book—Georgia for Bees, Etc.

1. This is my plan. Am I right or wrong? I have 12 box-hives. I am going to let them swarm naturally and put the new swarms in dovetailed hives (8-frame), and run for comb honey. I am going to keep the box-hives to supply me with swarms, and do all I can to prevent the colonies in the frame-hives from swarming.

2. One of my box-hive colonies died and I cut out some of the nice combs and stuck them in the frames of one of the new hives, thinking I would give the first swarm a good start and soon have a super of fine honey. The first swarm came out April 15, and it was a large one. I think there must have been a peck of bees in that swarm. I was overjoyed. So I set about and quickly had them hived; but alas, my precious bees spent just 2 hours with me, when they came bulging out. I threw sand, beat pans, but nothing on earth could stop the onward rush of those absconding bees. So I said, "So long," and let them go their way. I had plenty of foundation, but I thought the combs would be better. I examined the hive after they left and found that they had torn down every piece of comb. Please show me my mistake.

3. Will 2-inch strips of nice combs in the super answer as well as foundation? What is the best method of sticking them in?

4. Are supers ever left on the hives in the winter?

5. I notice in some of my hives that 5 or 6 bees get in the hive-entrance and seem to stand on their heads and make a buzzing noise, and they won't move for anything. The bees can run right over them but they are stuck right there, and keep on buzzing. What makes them do that? and what does it mean?

6. What bee-book would be best for me (a beginner) to get?

7. Do you consider middle Georgia a good place to keep bees for profit? We have no clover, but we have about everything else. The season opens here the first of April, and lasts until the first of September.

8. By using a one-inch strip of foundation in the brood-chamber and supers, should I expect to get one filled super from each new swarm? GEORGIA.

ANSWERS.—1. Your plan is all right. If you desire to have only one swarm from each colony, getting honey rather than increase, set the swarm on the stand of the mother colony with the latter close beside the swarm; and then a week later move the old hive to a new place.

2. You were right in thinking the swarms would like good combs better than foundation. If you had given them clean combs well fastened in the frames the result might have been very different. The likelihood is that the combs were not fastened in the frames very well, and that you didn't give the bees as much air as they ought to have had. The swarms being strong, there was much heat in the hive, the combs tumbled down, and the bees decided they would leave such an uncertain habitation.

3. Yes. Have a dish of melted wax; dip one edge of the comb in the wax, and then stick it where you want it to stay.

4. Yes, but you should never leave a super of sections on after the harvest has closed. They will be darkened by the bees.

5. Those bees are ventilating, and you can't do anything for them.

6. "Root's A B C and X Y Z of Bee-Culture," Dadant's "Langstroth on the Honey-Bee," and Cook's "Bee-Keeper's Guide," all are good.

7. Some bee-keepers do very well in Georgia.

8. In a good season you might do better than that if you do as directed in Answer 1.

Brood Killed by Heat.

In answering my question in the American Bee Journal you askeu me if I had ever known bees to allow the inside of a hive to become hot enough to kill the brood. I have. It was the middle of last July. The hives (3 in all) were double-walled ones, 2 stories high, and painted a walnut color. I was trying to introduce a queen to one of the colonies, and the hive got hot enough inside not only to kill a good bit of the brood, but it also killed the queen and her escort bees. It also drove nearly all the other bees outside the hive. I opened the hive at noon on this particular day to see how the queen was. I found nealy all her escort bees dead, and herself nearly so. She died before night. I took some of the combs out to see how things were inside the hive. As I lifted one comb out I saw young larvæ leave the bottom of the cells, and travel as fast as they could for the entrance to the cells. Some came clear out, while others came only part way out. Some of those that remained in the bottom of the cells died, as well as those that came part way out. And more or less of that which was sealed over was also killed. The bees did not remove a good share of the dead brood before it rotted. It was rotten or nearly so, by the next afternoon, and the bees refused to touch the nasty stuff. They dried up to nothing but dark spots, some on the bottom, the sides, and some in the bottom of the cells. I had never had a case of foul brood, and knew nothing about it except what I had read. But I was afraid of that rotten stuff. I looked at the bee-books and papers to see if I could find the causes of foul brood, but did not get much satisfaction. So there was nothing to do but destroy the combs, or leave them alone. If I destroyed the combs I would learn nothing. But if I left them alone I would. I decided to leave them alone, and learn from experience. And if need be, pay for my knowledge. And I paid.

I had only 4 colonies, and I lost 3 out of the 4. The fourth colony was in a single-walled hive, and painted white, and stood the heat all right. When the bees tried to rear brood in those combs again dead brood appeared in scattered cells. Some died before being sealed, others after. As the season advanced the amount of dead brood increased. And the strength of the colonies diminished until at the beginning of winter but few bees were left in either of the hives. And they died the first of the winter. I have not destroyed the combs yet, but intend to do so. They are where no bees can get to them. I thought before destroying the combs I would try to find out whether it was foul brood. And in about 2 days after this letter is mailed I intend to mail a sample of comb and dead brood to you to see what you think about it. When you receive it do anything you have a mind to with it, and then let me know whether it is dead or foul-brood. If it is not, it is not one whit better. What's in a name, anyway? "A rose by any other name would smell as sweet." Whatever it is, it was caused by the brood that was killed by the heat. And that is one thing about it that I am sure of. The brood was perfectly healthy and all right before being killed by the heat.
MICHIGAN.

ANSWER.—I've had combs melt down in hives, but never brood killed by the heat. It may, however, be more common than I think. I am also surprised that the bees did not clean out the dead brood. As the brood was rotten, or nearly so, by the next afternoon, it could hardly be that this was caused by any contagious disease, provided the colony was healthy before the roasting, for it is not likely that any disease could develop so rapidly.

The sample of dead brood sent has come to hand. You ask me to let you know whether or not it is dead. I am strongly of the opinion that it is. It has the appearance of being very dead. As to whether it is affected by foul brood or something equally as bad, I don't know. As I have repeatedly said in this department, I'm not an expert on bee-diseases. I think I'll send it to General Manager N. E. France and see what he calls it.

But supposing it is a case of foul brood, that doesn't prove that foul brood could result from dead brood killed by heat. There is the possibility that there was some source of contagion within reach of your bees. It would be hard for you to be positive that no diseased colony was within a mile or two. Still harder would it be for you to be certain that there was no case in which some one had brought honey from a diseased colony perhaps a hundred miles away, some of this honey being where your bees could get it. At any rate, the authorities tell us that rotten brood will no more start foul brood without the seeds of the disease than a field of corn can be started without any corn as seed.

Later—I sent the sample to Mr. France, and his reply is: "Any one with such combs should at once write Michigan Inspector, R. L. Taylor, of Lapeer, Mich., to call at once." So I suppose there is no doubt that the brood is not only dead but diseased. But, as before intimated, that's no proof that killing the brood made it diseased.

Reports and Experiences

Bees Doing Fine.

Bees in this vicinity are doing fine, and I have already made 50 percent increase. The indications are favorable for another exceptionally good honey-year.
LEO E. GATELEY.
Fort Smith, Ark., May 10.

Cold and Backward Spring.

This has been the most backward season I ever saw. One bee-keeper did not take bees out of the cellar until the very last of April. It snowed almost every day the first week in May. We had quite a snowstorm the 1st. The bees are not so strong as when I took them out of the cellar, April 1, 2, and 3. I look for a heavy loss in this section. They have scarcely any brood, not half as much as when I took them from the cellar. The queens are laying, and there are plenty of eggs, but no brood to speak of—too cold for brood-rearing.
GEO. B. HOWE.
Black River, N. Y., May 8.

Disinfecting Combs.

We are told that to keep combs free from the wax-worms we should use bisulphide of carbon; and once is a plenty. March 20, 1906, I had 29 colonies living. Fine weather, and soft maple and elm came out in blossom, and the bees worked well until the evening. March 31, at sundown, the wind turned northwest and it was cold all through April. When it became warm in May so that bees could fly, I had just 9 colonies living, so I was pretty nearly cleaned out. There was brood in every hive—from 2 to 3 frames. Not any was smaller than a man's hand in size, with 10 to 30 pounds of honey in the hives, so I had a mess to clean up. I set the hives back of the hives with bees. They cleaned them out well, all but one hive. They cut the combs badly, but did not spoil them.

After the bees had cleaned up all and left, I soon found that the wax-worms began to work. So I got one pound of bisulphide of carbon, then cut a lath as long as the hive, 16 inches, wrapped newspaper around the lath and nailed at each end. This closed the front tight. Then I took 2 pieces of paper that covered the top well. Then I turned into the hive 2 tablespoonfuls of bisulphide of carbon and put the papers and then the honey-board on. I used a brick for a weight. I found it to be necessary to do this once in a week or 10 days, or the worms would get the start of the bee-keeper. They spoiled 2 sets of combs for me after using the first time. Since then I have kept the combs free from the worms, for 2 years.

I have 23 hives with full sets of combs, and it costs me my time and 2 pounds of bisulphate of carbon, and the combs are good. "Once a week, and keep dry."
E. TUCKER.
Bergen, N. Y., May 12.

Expects Honey Later.

Bees have got down to business here at last. My bees are swarming, and swarms are being caught in the woods every day. Almost all are being put into box-hives. I can't get the farmer in the bee-business interested in the movable-frame hive. The poplar is in bloom, and we will have some flowers from this time on. I am looking for some honey after a while.
R. V. PERRY.
Greenfield, Tenn., May 13.

Drinking Milk with Honey.

In the April issue I notice "Honey gives him stomach-ache." I hesitate to correct Dr. Miller's answer, but as it will aid the consumption of honey, perhaps he will forgive me. Advise them to drink milk when they eat honey, and it will stop fermentation. It seems the casein neutralizes the acid produced in fermentation just as cheese does in pastry, and in cases where fermentation becomes chronic the albumen of eggs. This condition is often found where people are troubled with uric acid. Then if milk or albumen do not accomplish the trick, take ½ teaspoonful of bicarbonate of soda and ¼ teaspoonful of bismuth subnitrate from ½ to 2 hours after eating honey. Fermentation, if long continued and unchecked, will produce ulceration of the stomach and perhaps cancer.
Valhalla, N. Y. A. RICHTER.

Caucasian Bees.

On page 151, F. W. Blakely refers to an Iowa writer on page 313, for October, 1908, in which he draws attention to what I said in regard to Caucasian bees as not being desirable to keep. I wish to say that I am not accustomed to write for the public, and that if I failed to make myself understood, he must excuse me. The queen referred to was an Italian I introduced to supersede a Caucasian queen. In 1907 I sent for 3 Caucasian queens, and got them safely introduced. They did fairly well, and came through the winter all right; they received the same treatment my other bees did; they did fairly well, but my Italians and hybrids did better. I find that they are much given to drone-rearing. I hived one swarm on full sheets of foundation and in due time they bad a fine lot of combs filled with brood and honey; but what took me by surprise was, that I found one comb near the center of the hive about one-third full of drone-brood in worker-cells, and the drones seemed to be nearly as large as those reared in drone-cells. I find also that they will rear a large number of queens when they swarm. Most of the combs from which the swarm came had from 2 to a dozen or more queen-cells on each, and I am led to believe that the queens are not quite as large as queens from other bees. At least, I found that a larger percentage would go through queen-excluding zinc. Those bees would carry in no more propolis than other bees during the summer, but it was only at the close of the season that they would plug up the entrance.

In color they are very much like black bees, but of a more greyish appearance, particularly when young. When out in the field, I could not tell them from black bees with any certainty. I find them very gentle at almost any time when other bees are inclined to be cross. My bees are mostly what are called the golden Italians, not the long-tongued red clover bees, yet I find that bees will work on red clover for a day or two every year if the conditions are right—not alone the Italians, but hybrids and blacks as well.

Now, Mr. Blakely, if you find that I have made further misrepresentations, please point them out, and I will try to correct them.
FRED BECHLY.
Searsboro, Iowa, April 10.

Good Prospect for Honey Crop.

The outlook for a good crop of honey is good here at this time. My bees wintered fine. I had not a single loss out of 26 colonies; all came through in fine shape, but one, which is, I believe, queenless. I winter them on the summer stands in single-walled hives, and never lose a colony, except from carelessly letting the entrance get sealed up with ice when it sleets. A 3-frame nucleus ordered last season, has done well. I have 2 full colonies now ready to swarm, and got about 30 pounds of fine comb honey from them last fall. I have had no swarm, but am expecting it every day, as the bees are lying out some.

Fruit-bloom was good. Everything was full, and bees made good use of it. Dandelion followed, and now wild cherry and some little clover are in bloom. The prospect for a good white clover honey-flow is excellent, all the talk to the contrary notwithstanding. I sold my last year's crop here at home in the local market, for 12½ cents a pound. I could have gotten 15 cents if I had held onto it a little longer. All together the prospect "looks good" to us, and we hope for a good year for all engaged in the business, for business or pleasure. I am in it for both, and get both out of it. There are but few bee-keepers here, and very few indeed who understand the business and run it on business principles.
H. S. CARROLL.
Lentner, Mo., May 24.

Flouring Queens Before Introducing.

On May 3 I received 3 tested queens which I wanted to introduce. Having just read in Gleanings that queens could be introduced by sprinkling the queen as well as the other bees with flour after placing the queen on the frame I thought I would try to experiment.

I went to the apiary and selected a colony whose queen had been winter-killed. I took out the frame, sprinkled the queen with flour while in her cage together with her attendants, opened the door of the cage and let her crawl on the frame. As soon as she was on the frame I sprinkled all the bees on the frame. I also took out a few of the other frames and sprinkled them. To my surprise both the queen and her attendants walked unmolested. I put the frame back, and on the 12th I examined the hive again and found the queen all right and laying.

Encouraged with my success I tried to introduce another queen to another colony that had been given brood a few days before, but it was not a success. The queen had no sooner come on the frame than the bees went after her, and before I could rescue her she was crippled. Will some one who has tried this, inform me if the fact that the bees were given brood and were rearing a queen would make the difference, or was my first attempt just "happy circumstance?"

I trust that this flour method will be a success, for if it is it will solve to a certain extent an easy way of introducing. I should be glad to hear through the columns of the American Bee Journal of any one who has tried it, and with what success.

A. F. Nelson.

Benson, Minn., May 15.

Peirce Service
AND
Root Quality
Always Win

Here are two instances out of several thousand.

Grafton, W. Va., April 29, 1909.

Mr. E. W. Peirce :

The bee-supplies are at hand. I am more than pleased with them. I would rather have the frames you sent me than the kind I meant to order, because the foundation is more easily put in them. FRED BAILEY.

Martinsburg, O., March 26.

Mr. E. W. Peirce

The goods at hand; everything in good condition. All parts fit nicely together. I like to order goods from you, Mr. Peirce, because you are so prompt in making shipment. PAUL GILMOR.

Join the happy company of which Messrs. Bailey and Gilmor are members by sending your next order to

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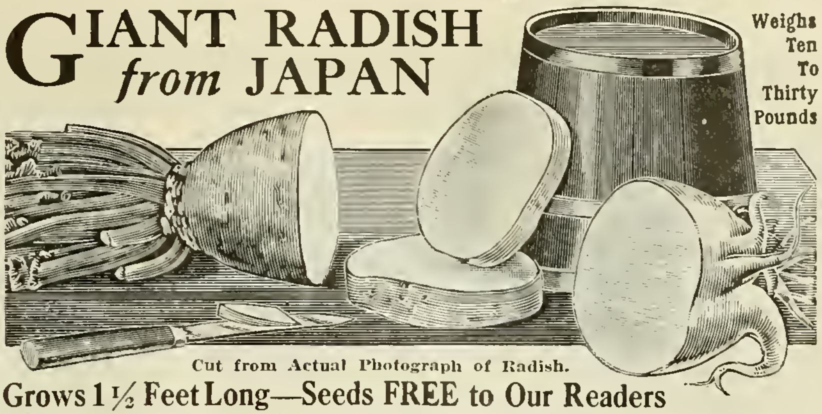

GIANT RADISH from JAPAN

Weighs Ten To Thirty Pounds

Cut from Actual Photograph of Radish.

Grows 1½ Feet Long—Seeds FREE to Our Readers

What do you think of a variety of radish that weighs thirty pounds, which is often a foot and a half long and more than eight inches through, which is as tender and sweet during the hottest July weather as the earliest spring radishes, and which, notwithstanding its immense size, never becomes hot or pithy; which can be eaten raw like an apple, can be cooked like turnips, and when pulled late in fall will keep late into winter as sweet and crisp as when pulled. Add to this the fact that the tops, which grow to be two to three feet long, make fine "greens," and you have a pretty good description of the giant radish, Sakurajima, a recent introduction from Japan.

The Fruit-Grower has secured practically all the seeds of this splendid radish in America, and I want you to have a package for planting this season. There is plenty of time to plant, for this is a hot-weather radish, and must be planted late.

This splendid new radish was first called to my attention by one of our readers on Long Island. He has grown Sakurajima radish for two seasons, and says that last year they averaged fifteen pounds in weight and every radish was tender and sweet, and did not get hot at any time.

Hon. W. J. Bryan, seeing our advertisement, writes: "You are the man I am looking for. **I saw the Giant Radishes in Japan, and want some seed.** I saw radishes 15 to 18 inches long, and the flavor is good. I have been intending to send to Japan for seed. Now, I will buy them of you, or subscribe for your paper—in fact, you can trade with me on your own terms."

These Seeds are Free with a Trial Subscription to The Fruit-Grower

Here is the way to get the seeds: Send me 25 cents for a six months' trial subscription to **The Fruit-Grower**, and a package of the seeds will be sent you absolutely free. This trial offer gives you **The Fruit-Grower** six months at **Half Rate.** Regular rate $1.00 a year.

The Fruit-Grower is the leading fruit paper of America; it is devoted solely to horticulture, and has 70,000 readers who swear by it; it is clean and up-to-date—no whisky or medicine advertisements. Ask the editor of this paper about **The Fruit-Grower.** He knows the paper well, and knows I could not afford to make an offer of this kind unless I knew that both **The Fruit-Grower** and the Sakurajima radish will make good. Send 25c, coin or stamps, at my risk, for a six months' trial subscription, and seeds will be sent by return mail FREE. **Write Today.**

JAMES M. IRVINE, Editor The Fruit-Grower, Box S, St. Joseph, Mo.

Who Pays the Coal Bills?

Some manufacturers of Bee-Keepers' Supplies burn

New Mill Dam with Fifty Feet Water Power.

A Car-load of Coal a Day

The cost of the coal must be added to the cost of the material and the labor and all other expenses, and the **Consumer pays the Bill.**

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The above is a photograph of the Kinnickinnich at the site of the Power plant of the Bee-Supply factory of W. H. Putnam, of River Falls, Wisconsin. Send 10 cents for *"Bee-Talk,"* and experience an agreeable surprise in prices.

W. H. Putnam, River Falls, Wis.

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Reared under supersedure conditions, untested at $1.00 each until after July 10th, when the price will be 75c. Queens ready after May 25th. Send for price list. 5A4t

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Reference, Arthur C.Miller,Providence,R.I.

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incorporated 1866 by Special Act of the New York Legislature, will open its next session the first Wednesday in September. Subjects embraced: Phrenology; Physiognomy; Ethnology; Psychology; Physiology; Anatomy; Hygiene; Heredity; Anthropology.

For terms and particulars apply to M. H. Piercy, Secretary, care of **FOWLER & WELLS CO., 18 East 22d St., New York, N. Y.**

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Tennessee-Bred Queens

37 Years Experience, breed 3-band Italians only.

	November 1st to July 1st			July 1st to Nov. 1st		
	1	6	12	1	6	12
Untested	$1.00	$5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select Untested	1.25	6.50	12.00	1.00	5.00	9.00
Tested	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested	2.50	13.50	25.00	2.00	10.00	18.00

Breeders $4.00. Add twenty percent for queens to be exported.

Nuclei, without queens: 1-frame, $2.50; 2-frame, $3.50; 3-frame, $4.50. 1 Full Colony, 8-frame, $9.00.

Select the queen wanted and add to the above prices.

NOTE

I have transferred to my son, Benj. G. Davis, my straight 5-band and Golden department, and in order to receive the promptest attention, all correspondence for these should be sent direct to him. He practically grew up in my queen yards, rears queens by my methods, has had charge of this department for years, and understands his business.

Prices same as above except Breeders, which are $4.00 to $10.00. No disease.

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Queens $1.00 each. Breeding Queens one year old, with honey record, $5.00. Queens ready to send out July 1st.

W. M. PARRISH, Lawrence, Kans.

COVERT, KANS., July 30, 1908.

W. M. PARRISH:—That 1906 Queen is still ahead this season. The Queen I bought of you last year has done well. She heads a colony that has not yet swarmed, and they have made more than double the usual average per colony. Your bees are bustlers.

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We can furnish Tested Queens **by return mail.** Vigorous and prolific queens reared last fall and wintered in 4-frame nuclei, $1.00 each.

Our 3-band strain of Italians will not disappoint you. 3Atf

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Will again sell the genuine strain of Miller Queens at the following prices: Untested, 60 cents each after June 15th. You will oblige me by sending for my price-list on Untested, Tested Queens, Nuclei and full colonies. Address, 6A2t

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Rhineland, - Missouri

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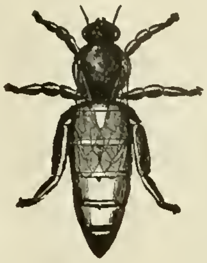
American Bee Journal

DOOLITTLE'S "Scientific Queen-Rearing"



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"It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of modern methods of rearing queens wholesale."

Mr. Doolittle's book also gives his method of producing comb honey, and the care of same; his management of swarming, weak colonies, etc. It is a book of 126 pages, and is mailed at the following prices: Bound in cloth, $1.00; bound in leatherette, 75 cents.

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Our stock is Northern-bred and hardy.

Our five yards Winter on Summer stands with practically no loss.

One of our customers tells us he has become one of the largest honey-producers of the West and says that in a great measure his success is due to our stock.

Prices before July 1	1	6	12
Select queens	$1 00	$5 00	$9 00
Tested queens	1 50	8 00	15 00
Select tested queens	2 00	10 00	18 00
Breeders	4 00		
Golden five-band breeders	6 00		
Two-comb nuclei, no queen	2 50	14 00	25 00
Three-comb nuclei	3 50	20 00	35 00
Full colonies on eight frames	6 00	30 00	

Add the price of whatever queen is wanted with nuclei or colonies. Queens ready April 1st, bees May 10th. Safe arrival and pure mating guaranteed. Circular and testimonials free.

Quirin-the-Queen-Breeder, Bellevue, O.

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FREE OFFER

NOT CHEAP QUEENS, BUT QUEENS CHEAP.

Reared from the best selected red-clover mothers. My queens are all reared by the bees, as they far better understand the job than I. I use no artificial plan. All queens large and well developed, such as will, with proper management, fill an ordinary hive full of eggs and brood in ten days.

Directions for building up weak colonies with my queens, 10c.

Prices of Extra Selected Three-Band Bees and Queens.

Untested queens	1,	$ 75 ;	6,	$ 4.20
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Breeder	1,	5.00 ;	3,	12.00
1-frame nucleus with untested q'n.	1,	1.75 ;	6,	10.20
2-frame nucleus with untested q'n.	1,	2.25 ;	6,	13.20
1-frame nucleus with tested queen.	1,	2.00 ;	6,	11.70
2-frame nucleus with tested queen.	1,	2.50 ;	6,	14.70
Full colonies, untested queen				4.75
Full colonies, tested queen				5.00

Prices of Extra Selected Five-Band or Golden Italian Queens.

Untested queens	1,	$ 1.00 ;	6,	$ 5.70
Tested "	1,	1.50 ;	6,	8.70
Breeder	1,	10.00 ;	3,	24.00

If queens are wanted in large quantity, write for price list. 3Atf

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House Plans—Blue prints of 20 artistic homes, costing from $1250 to $4500, for 25 cents. 4A3t

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Golden Red Clover—Italians—and Gray Carniolans

	1	6	12
Untested Queens	0.75	4.00	7.50
Tested	1.00	5.50	10.00

Breeders, $3.00 to $4.00 each. 5Atf

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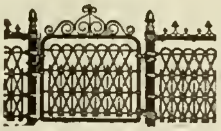

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Golden and Red Clover Stock

The late E. L. Pratt (Swarthmore) used 50 of my Goldens in 1908, and wanted several hundred this season. My clover stock originated from the leather-colored Italian bee of Northern Italy, and has never been surpassed in the production of honey and its many other good qualities.

Price of Queens: 75 cents each; 3 for $2.00; 6 for $3.75; $7.00 per doz. Tested $1.25 each. Nucleus with young queen on 2 frames, $2.50, June 1st. All queens guaranteed to reach buyer in good condition.

Circular free. 5Atf

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TEXAS FAMOUS QUEENS

The Blue-Ribbon Winners

Will be ready early in April. Let me book your order now for April, May and June delivery.

—PRICES—

Untested, each, 75 cts.; per doz., $ 8.
Tested, " $1.25 " " " 12.

Italians, Banats, and Carniolans—all blue-ribbon winners, and free from disease. Write for Circular. 3Atf

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Black Diamond Brand Honey, and honey-packages of all descriptions. Their office is at the same address, and here they are fitted to receive bee-keepers or their orders, entertaining the one and handling the other with a service that cannot be surpassed. If you are interested in bees, live in New England, and have not their catalog and circulars, drop them a postal. You will be well repaid. 5A6t

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That is, Naturalized Italian Bees, and acclimated to Northern Latitudes. No better bees on the face of the earth. Send postal for price-list. Address, 6A4t

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IF you need a nice yellow Italian Queen at once, send to **J. L. Fajen, Alma, Mo.** Untested, only 75c. Tested, $1.25. 3-frame nucleus with Queen, $2.75. Full colony, in 8-frame hive, $5.50. 6A6t

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Bees and Queens
FOR SALE

Full colony in 2-story 8-frame L. hives, $7.00; price of queen to be added.

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One 3-frame Nucleus, $2.75; price of queen to be added.

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Tested Queen in April and May, $1.25. Warranted, in May, 75 cts.; $7.50 per dozen.

Italian, Carniolan, or Caucasian, at the above prices.

Virgin Queens of the above strains, 25 cts. each; dozen, $2.50. 4Atf

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Write us now for our Catalog and get low prices on good, honest,

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10A34t Please mention the Bee Journal.

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We handle the well-known

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Illustrated catalog free.

The C. M. SCOTT CO.,
1009 E. Washington St.,
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Good Italian Queens

$1.00 each; 6 for $5.00; 12 for $9.00.
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CHOICE ITALIAN QUEENS

are the result of careful selection and breeding from the best honey-gathering strains of superior long-tongue Italians. Our methods will produce perfectly-developed, long-lived and prolific queens. If you want bees that will winter well, build up rapidly in the Spring, and roll in the honey, our queens will produce them.

We are now booking orders which will be filled in regular rotation, beginning May 1st. You should get in line by placing your orders early.

Single queens—golden or three-banded—$1.00; 6, $5.00; 12, $9.00.
Safe delivery and satisfaction guaranteed.
Send for circular—it's an eye-opener.

4Atf **THE GOLDEN APIARY, Dodge City, Kansas, U. S. A.**

Three Millions

The magic initials A. Y. P. E. are emblazoned on the Horizon of the Occident. They stand for Alaska-Yukon-Pacific Exposition, which means the World's Fair at Seattle that opens June 1st and closes October 16, 1909.

Six great transcontinental railroads will bring the people of the earth to this wonderful show, viz: Canadian Pacific; Great Northern; Chicago Milwaukee & St. Paul, Northern Pacific, Union Pacific, and Southern Pacific lines. Hundreds of steamships will augment the throng.

The Northwest Farm and Home—the oldest descriptive and agricultural magazine in the world—will distribute **free** at the Exposition several million copies elaborately illustrated and containing articles by well-known authors which will make the periodical invaluable.

Send for rate cards and sample copies.

Northwest Farm and Home
North Yakima, Wash.

J. E. HAND will begin the season of 1909 with improved facilities for rearing the

CHOICEST QUEENS

He has developed a system of queen-rearing that contains all the best points of other methods with none of the defects, including some **valuable improvements** of his own—in short, a system through which the highest queen development is reached by **correct** and **scientific** principles, which means that he is now in position to offer to the bee-keeping public a **higher grade of queens than is usually offered in the common utility classes**, owing to scientific methods which produce queens of a higher development than can be reared by the ordinary methods in vogue, and also to an **improved method of classifying queens** which strikes the word **select** from our list, and gives a **square deal to all.** No selects means no culls, and the highest grade of queens in the untested and tested classes. These queens will be reared from a superior strain of hardy Northern-bred **red clover Italians**, "the very best," and will be safely delivered to any address in the United States, Cuba, Canada or Mexico, at the following prices; Untested, $1.25: 3, $3.00. Warranted, $1.50: 3, $4.00. Tested, $2.00: 3, $5.00. Special prices on large orders. Valuable information free. Send for it to-day.

J. E. HAND, BIRMINGHAM, OHIO, ERIE CO.

QUEENS
Of High Quality

Our queens are reared by the most **approved methods** by a **queen specialist** of 30 years' experience.

We breed the **Leather-Colored, Red Clover,** and **Golden Italians.**

We solicit the trade of all bee-keepers wishing to secure a **hardy, prolific race** of Italians, whose **honey-getting qualities** have been proven **superior.**

Select untested	$1.00	½ doz. $5.00	1 doz. $ 9.50
Tested	1.50	" " 8.00	" " 14.00
Select tested	2.00	" " 9.25	" " 16.25

Queens by return mail. Prices for large quantities on application. Circular free.

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Book on Fertilizers, Free

Every progressive farmer is making a study of this important subject. We have an 80-page book with fine colored cover which treats every phase of the fertilization question. Send 10c for 3 sample issues of The Fruit Belt and get this book free. Send today. Fruit Belt Publishing Co., 187 Herald Square, Grand Rapids, Mich.

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CAPONS bring the largest profits—100 per cent more than other poultry. Caponizing is easy and soon learned. Progressive poultrymen use

PILLING CAPONIZING SETS

Postpaid $2.50 per set with free instructions. The convenient, durable, ready-for-use kind. Best material. We also make *Poultry Marker 25c. Gape Worm Extractor 25c French Killing Knife 50c. Capon Book Free.*

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Queens on Approval

By return mail. If not satisfactory leave in Post-Office. Write for special prices on Bees and Supplies.

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to get my new, handsome **Fashion Book,**

HUNDREDS OF LATEST STYLES

with illustrated lessons on Cutting and Dressmaking, **FREE,** and I will sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

I publish the **FARMER'S CALL, a weekly paper** for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for women folks is its fashions in which I show **the 5c patterns.** Let me help you to save money.

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Send me 25c and I will send you the **Farmer's Call every week for one yeer** (about 1000 pages) and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts. because I buy them by the thousand and don't make any profit. I don't want any profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY.

You can use this coupon—cut it out now and mail to me with 25c—1c and 2c stamps taken, but a quarter almost always goes safe:

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State.. 18

Very Special Offer

Send me 50c and I will send you the Farmer's Call for one year, the Illinois Farmer for two years, the Fashion Book prepaid, with privilege of buying patterns at 5c each. Use above coupon, but enclose 50c and write I. F. in the corner. Cut out the coupon right now, fill out, and send to

JOHN M. STAHL, J. P. Sta., Chicago, Ill.
(Prop. Farmer's Call for past 25 years.)

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That covers the whole Apicultural Field more completely than any other published, send $1.20 to

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—FOR HIS—

"BEE-KEEPER'S GUIDE"

Liberal Discounts to the Trade.

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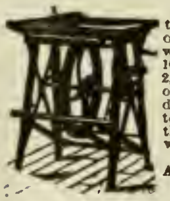
BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, **W. F. & JOHN BARNES,**
995 Ruby St., Rockford, Ill.

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Western Bee-Keepers We Will Show You

how to save money. Send for our new catalog of the best Bee-ware made.

THE COLORADO HONEY-PRODUCERS' ASS'N, Denver, Colo.

SATISFACTION

is what I guarantee to those who buy my leather-colored Italian queens. Untested, June, 90c; 3 for $2.50; 6 for $4.75; doz., $9.00; 20 or more at 60c each. Later, 70c; 6 for $3.75; doz., $6.50; 20 or more at 50c each. 11Atf

S. F. TREGO, Swedona, Ill.

"Forty Years Among the Bees"

By Dr. C. C. Miller

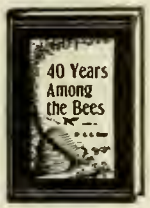
One of the Best-Known Honey-Producers in all the World

THIS book of over 340 pages tells just how Dr. Miller manages his apiaries to produce the most honey, which, in turn, brings the most money. Dr. Miller has been "at it" some 45 years, and so is competent to tell others the best way to be successful with bees. In 1903 his crop of comb honey was over 18,000 pounds, and he is not located in the best honey-producing part of the United States, either—Northwestern Illinois.

The book is bound in substantial cloth, gold-lettered, and is sent postpaid for only $1.00; or with the American Bee Journal one year for $1.50. (Or send us 4 new subscriptions to the Bee Journal—with $3.00—and we will mail you the book **free** as a premium.) Every bee-keeper ought to have both the book and the Bee Journal, if not already possessors of them.

As Dr. Miller gets a royalty on his book—so many cents on each copy sold—every bee-keeper who buys it is thus helping a little to repay him for his effort to lead others to success through his writings on bee-culture.

As we have a good stock of these books on hand, **we can fill all orders by return mail.** This is the time of year to read up on bee-keeping. Better send us your order at once for Dr. Miller's book, and study it carefully so as to make the most of the bee-season. Address,



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POULTRY HUSBANDRY,
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Stop--Look--Listen!

If you want to improve your bees you should try at least ½ doz. of our famous long-tongued Italian Red Clover Queens, bred for business only. Will guarantee them to be equal to the very best queens bred in the U. S. Have been a queen-breeder for 20 years. Untested queens, after May 10, 75 cts each; ½ doz., $4.00. Tested, $1.25 each; ½ doz., $7.00. Nuclei and full colonies in the season. Send for free catalog of Bees and Queens. 4Atf

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CLEAN
BEE SMOKER

Pat'd 1878, '92 & 1903

Extracts from Catalogs—1907:

Chas. Dadant & Son, Hamilton, Ill.—This is the Smoker recommend above all others.

G. B. Lewis Co., Watertown, Wis.—We have sold these Smokers for a good many years and never received a single complaint.

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All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made.........	$1.50—4	inch stove
Doctor—cheapest made to use	1.10—3½	"
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Little Wonder—as its name implies	.65—2	"

The above prices deliver Smoker at your post-office free. We send circular if requested.

Original Bingham & Hetherington Uncapping-Knife.

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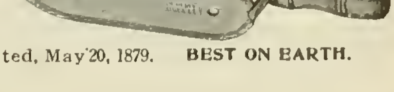

Patented, May 20, 1879. **BEST ON EARTH.**

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The A. I. Root Company, 42-60 Institute Place

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CHICAGO, ILLINOIS

We are now fully moved, located, and well stocked with a FULL LINE of supplies. We have the best shipping facilities, and with plenty of help we promise to get goods to you promptly. There are only two reasons why we might fail ; viz., the neglect of some transportation company to give its usual good service, and our inability to turn out stock fast enough to care for your orders. We are promised a large car-load from our factory every TEN days, so you see we expect to take good care of your orders. If you haven't our new catalog let us send you one.

Remember our new location, four blocks north of our former place.

The A. I. Root Co., : : Chicago, Illinois

42-60 Institute Place R. W. Boyden, Resident Manager. Jeffrey Building

Take Elevator to Sixth Floor. Telephone 1484 North.

Bee-Supplies

Distributor of Lewis and Root Bee-Supplies. We are now prepared to furnish promptly a full line of Supplies and Berry Boxes. Choice new stock just from factory. Beeswax wanted. Send for Catalog.

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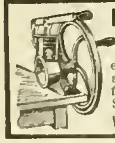

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FEED your hens cut green bone and get more eggs. With a **Crown Bone Cutter** you can cut up all scrap bones easily and quickly, and without any trouble, and have cut bone fresh every day for your poultry. Send at once for free catalogue.

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Best Made-Lowest in Price

Italian Bees for Sale

1 colony, $5; 2 for $9; 5 for $20. Queens—Untested, 75c each; 6 for $4; Tested, $1 each; 6 for $5. Will put swarms into any style hive to suit purchaser. 5Atf

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Freehold, Greene Co., N. Y.

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MARSHFIELD BEE-GOODS

FRIEND BEE-KEEPER—We are prepared to fill your orders for **Sections.** A large stock on hand. Also a **Full Line of Bee-Supplies. We make prompt shipments.**

MARSHFIELD MFG. CO., Marshfield, Wis.

IOWA—J. W. Bittenbender, Knoxville.
Gregory & Son, Ottumwa.
KANSAS—S. C. Walker & Son, Smith Center.
MICHIGAN—Lengst & Koenig, 127 South 13th St., Saginaw, E. S.
S. D. Buell, Union City.
NEBRASKA—Collier Bee-Supply Co., Fairbury.
CANADA—N. H. Smith, Tilbury, Ont.
ARIZONA—H. W. Ryder, Phœnix.
MINNESOTA—Northwestern Bee-Supply Co., Harmony.
ILLINOIS—D. L. Durham, Kankakee.
OHIO—F. M. Hollowell Harrison.
TEXAS—White Mfg. Co., Blossom.
WISCONSIN—S. W. Hines Mercantile Co., Cumberland.
J. Gobeli, Glenwood.

Westwood Red-Clover Queens

A New York customer writes, "I have tried queens from a good many breeders, but yours are far ahead of them all." 4A4t

HENRY SHAFFER, 2860 Harrison Ave., Sta. L., Cincinnati, O.

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FOR SALE—It will pay to get our special proposition.
A. G. WOODMAN CO., Grand Rapids, Mich.

"FALCON" QUEENS

Three-Band
Golden Italians
Caucasians
Carniolans

	1	6	12
Untested	$1.00	$5.50	$10.00
Select Untested	1.25	6.75	12.75

Tested, $1.50; Select Tested, $2.00

We have in charge of this department MR. LESLIE MARTIN, formerly queen-breeder in the Apiary of the U. S. Dept. of Agriculture, Washington, D. C.

Send for our free catolog of "Falcon" Bee-Keepers' Supplies.

W. T. FALCONER MFG. CO.
Jamestown, N. Y.

Headquarters for Bee-Supplies

ROOT'S GOODS

At Root's Factory Prices

Please Rush My Order

We can, as we have several carloads of hives, sections, foundation and all other bee-supplies.

Give Us A Trial

Shipments are made the same day order is received.
We can supply Red Clover and Golden Yellow Queens.

C. H. W. WEBER CINCINNATI ...OHIO...
Office and Salesrooms, 2146-48 Central Ave. Warehouses. Freeman and Central Aves.

Honey and Beeswax

CHICAGO, June 1.—The market is dull, few sales of comb honey being made, with best grades ranging from 11 to 12c; off grades from 1 to 3c less, with occasional sales of small quantities at 12 1-2 to 13c for the fancy. Extracted, white, 7 to 8c—the latter price for basswood; ambers 6 to 7c. Beeswax, 30c.
R. A. BURNETT & CO.

KANSAS CITY, MO., May 24.—The condition of the honey market is about the same as our last report, except the extracted. We quote: No. 1 white comb, 24 sections, $2.50 to $2.60; No. 2 white and amber, $2.25; white extracted, per pound, 6 to 6 1-2c; amber extracted, 6c. Beeswax, 28c.
C. C. CLEMONS PROD. CO.

ZANESVILLE, OHIO, May 26.—While there is some demand for honey, on the whole it is moving rather slowly. There are still a few offerings of last season's crop, and it would seem that the demand is hardly equal to the supply, save, perhaps, on extra-fine quality. For strictly No. 1 to fancy white-clover comb (the only grades which sell well here), the jobbing trade would pay 12 1-2 to 13 1-2c. The wholesale market is about as last reported; practically no calls for extracted at the present time. I offer for good clean beeswax 30c cash or 32c in exchange for bee-supplies.
EDMUND W. PEIRCE.

TOLEDO, May 26.—There is practically no demand for comb honey. We are making sales in a small way at 14 1-2 to 15c, with no demand for lower grades. White clover in barrels or cans is worth 7 1-2 to 8c in a retail way. Amber, extracted, California, 6 1-2 to 7c. Beeswax 28c cash and 30c in trade.
THE GRIGGS BROS. CO.

INDIANAPOLIS, May 25.—There is a very favorable demand for best grades of both comb and extracted honey; and while jobbing houses are fairly well stocked, very little honey is now being offered by producers. Jobbers are making sales at the following prices: Fancy white comb, 14 to 15c; No. 1 white, 12c. White clover extracted, in 5-gallon cans, 8 1-2 to 9c. Amber honey is in poor demand, and prices not established. Bee-keepers are being paid 29 to 31c for beeswax. WALTER S. POUDER.

CINCINNATI, May 26.—The market on fancy comb honey is cleaned up. There is a light demand for fancy white goods. There is an overstock of off-grade comb honey, which will not sell at any price. The market on extracted honey is fair, prices for amber ranging from 6 to 6 1-2c in barrels; white sage at 9c. Beeswax slow at 33c.
C. H. W. WEBER & CO.

PHILADELPHIA, May 26.—There has been very little trade in comb or extracted honey within the past week. Some few sales of comb honey. Fancy at 15 to 16c; No. 1 at 13 to 14c. Extracted honey, some fancy white in 60-lb. cans at 7 to 8c; light amber, at 6 to 7c, according to quantity.
WM. A. SELSER.

NEW YORK, May 26.—We have nothing new to report. In regard to comb honey there is very little demand for No. 1 and fancy white, and no demand for the other grades. Extracted honey is in better demand, and the receipts, however, are sufficient to meet the demand. We quote: California honey 8 to 8 1-2c; light amber, 7 to 7 1-2c; amber, 6 to 6 1-2c. The new crop of Southern and West India honey at 58 to 75c per gallon, according to quality. Beeswax firm at 30c. HILDRETH & SEGELKEN.

BOSTON, May 26.—We quote: Fancy white comb honey, 15c; No. 1, 14c; white extracted, 8 1-2c; light amber, 7 1-2c. Beeswax, 30c.
BLAKE, LEE CO.

LOS ANGELES, May 29.—Water-white extracted, 5 1-2c; white, 5c; light amber, 4 1-2c. Prospects not very bright now, too much cloudy weather. H. J. MERCER.

DENVER, May 28.—Local trade on both comb and extracted honey has of late been fairly good for this time of year, but as stocks on this market are heavy, prices have been lowered in order to clean up. We quote: No. 1 white, per case of 24 sections, $3.00; No. 1 light amber, $2.75; No. 2, $2.50. No demand for candied comb. Best white extracted honey, 8½ to 9c; light amber, 7½ to 8½c. We pay 26c for clean yellow beeswax delivered here.
THE COLO. HONEY PRODUCERS' ASS'N.

HONEY FOR SALE

We are producers and shippers of extracted alfalfa honey, in car lots, put up in 5-gal. cans, two cans to the case. Every can is inspected before leaving our warehouse, and all shipments are guaranteed equal to sample in quality.
Sample and price on application. 5A3t
IMPERIAL VALLEY BEE-KEEPERS' ASSOCIATON,
El Centro, California

We will Buy and Sell

HONEY

of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for

Beeswax

at highest market prices.

Hildreth & Segelken
265 & 267 Greenwich Street
NEW YORK, N. Y.

HONEY AND BEESWAX

When consigning, buying, or selling, consult

R. A. BURNETT & CO.
199 South Water St. Chicago, Ill

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DADANT'S FOUNDATION

It Excels....

What's in a Name?

That depends on whose name it is. It depends on what the name represents. It depends on the quality of the goods the name represents. It is **not** the name that makes DADANT'S FOUNDATION so well known and well liked, but it is the

Quality of the Goods

That's what backs up the name, and the **quality** is backed by 30 years of successful experience in foundation making.

EVERY INCH of DADANT'S FOUNDATION is equal to the best inch we can make. Do not fail to insist on Dadant's make when you order your foundation. Accept no substitute even though the dealer claims that his foundation is made by the same process.

It is the PURIFYING PROCESS that counts. Our method of purifying has been unequaled for years. This method leaves every essential in the pure beeswax, and our Foundation does not have the odor of wax cleansed with acids.

That is why several large honey-producers who have tested our foundation side by side with other makes, have found ours to be the best, and the best liked by the bees.

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Do not sell your beeswax until you get our quotations. We have received up to April 1st, over 80,000 pounds of beeswax for our 1909 trade. We will need over 80,000 pounds more before January 1, 1910. Drop us a card and get our prices.

Agents for **Dadant's Foundation** in every part of the **United States.**

DADANT & SONS, : : Hamilton, Illinois

DADANT'S FOUNDATION

500,000 Sections at $1.50 Per Crate

Manufacturer's stock just purchased by us must be moved at once in order to make room for another tenant. We offer for sale this job lot of one-piece Sections at this bargain price so as to avoid the expense of carting and storing these goods in our warehouses.

Packed Ready for Immediate Shipment.

These Sections are packed 500 to the crate and are ready for immediate shipment. The lot consists of a mixed assortment in the following sizes of **Off-Grade Sections**—some a little off color and some not quite smooth enough to qualify for No. 1 and No. 2 grades, but good enough for ordinary use:

4¼ x 4¼ x 1⅞ inches	. . Beeway	4 x 5 x 1⅜ inches	. . . . Plain
4¼ x 4¼ x 1½ inches	. . . Plain	3⅝ x 5 x 1½ inches	. . . Plain

Bee-keepers should take advantage of this exceptional opportunity to secure these Sections at this bargain price before the supply is exhausted. Manufacturers with but few exceptions are way behind on orders. A supply of these Sections on hand will be worth many times their cost in case of emergencies when you are in need of Sections and cannot get them, as they will come in handy to fill in with.

Remember, 500 Sections for $1.50 Per Crate

Orders will be filled for any quantity desired in the same order as received until the lot is disposed of. All goods shipped subject to approval, as we guarantee satisfaction to our clients at all times in every business transaction.

Don't Delay It. MAIL THAT ORDER TO-DAY. Don't Delay It.

Minnesota Bee-Supply Company, 252 Nicollet Island,
MINNEAPOLIS, MINN.

49th Year
No. 7

July, 1909

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10c. a Copy

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AMERICAN BEE JOURNAL

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Apiary of Ludwig Brendle, of Linville, Arkansas—(See page 231.)

Apiary of G. W. Weldy, of Lewistown, Illinois—(See page 231.)

THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY

GEORGE W. YORK & COMPANY

118 W. Jackson Blvd., Chicago, Ill.

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Objects of the Association.

1st.—To promote the interests of its members.

2d.—To protect and defend its members in their lawful rights.

3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

☞ If more convenient, Dues may be sent to the publishers of the American Bee Journal.

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They are lighter
stronger
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The freight is less
Dealers prefer them

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J. E. Crane & Son
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Untested Italian Queen-Bees

$4.00 for 6 queens; $2.10 for 3; or 75c for

A Standard-Bred Italian Queen-Bee

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

What They Say of Our Queens

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work. A. W. SWAN.
Nemaha, Co., Kan., July 15, 1905.

✣✣✣

GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best. She keeps 9½ Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
Ontario, Canada, July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of my best colonies. N. P. OGLESBY.
Washington Co., Va., July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. MCCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for $1.20. Three Queens (without Journal) would be $2.10, or 6 for $4.00. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

Address, GEORGE W. YORK & CO., 118 W. Jackson, Chicago. Ill,

Bee-Supplies Shipped Promptly

Send for Free Catalog

Although the destruction by fire, of the G. B. Lewis Company's factory at Watertown, Wis., has stopped the manufacture of the famous Lewis Bee-ware until they can get their new factory ready, we as their agents are filling orders as usual from the Lewis stock we have on hand and other up-to-date goods.

ARND HONEY & BEE-SUPPLY CO. (Not Inc.) H. M. Arnd, Proprietor,
Successors to YORK HONEY & BEE-SUPPLY CO., 191-193 E. Superior St., Chicago, Ill.
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Is the Best. Not because we say so, but because the Bees prefer it to other makes.

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It has built its Reputation and established its Merits, on its own Foundation and its own Name.

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Write for free catalog and prices on full Line of Supplies.

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And Nothing But Italians—That is What Quirin Rears

A superior improved strain. Northern-bred, are hardy and vigorous; always come out strong in the spring. Our stock is well known, and not necessary to say more here.

Prices of Queens after July 1	1	6	12
Select queens	$ 75	$ 4 00	$ 7 00
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Select tested queens	1 50	8 00	15 00
Breeders	3 00	15 00	
Straight five-band breeders	5 00		

Young queens from our improved stock are the best security against poor seasons. Requeen now and have bursting strong colonies in the spring. We employ 500 colonies. Queens sent outside of United States or Canada, 25cts. extra.

QUEENS NOW READY!

Sale Arrival and Pure Mating Guaranteed.

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Please mention Am. Bee Journal when writing.

ROOT'S GOODS

Are money-savers. We have a full line of Supplies, Bees, Queens, etc., and can supply you with anything in the

BEE-LINE

Queens any quantity. Tested, $1.00; Untested, 75c each. 4Atf

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50 GOLDEN BREEDERS

Bred from superior golden stock last season; now ready to mail. Their bees are hustlers and beauties. These breeders are as good as money can buy. They are simply fine. Their bees are very gentle to handle—$5.00 to $10.00 each; untested queens ready to mail after April 15. Golden and leather or three-banded stock. Our long experience as a queen-breeder is a guarantee that our queens are as good as the best. Untested, $1.00; 6 for $5.00; 12 for $9.00; tested, $1.50; select tested, $2.50; best, $5.00. This season's rearing. Write for prices on a large number.

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By members of the Michigan Bee-Keepers' Association. For free annual booklet giving names and addresses of members, address the Secretary, 7Atf

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A BARGAIN 5 1-str., 10-fr dov'd hives; 5 1½-str., 10-fr. dov'd hives these hives are fitted with Hoffman style frame, flat cover and reversible bottom; 100 Hoff. frames, 5 empty 8-fr. supers (for comb honey), and 5 10-fr. supers—all brand new—to the first person sending me $16.95

J. F. BUCHMAYER, Iowa City, Iowa

Fine Golden Italian Queens at 50c each 7A2t

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Italian Bees

Queens and Nuclei

Choice Home-bred and Imported Stock. All Queens Reared in Full Colonies.

Prices for July to November:

One Untested Queen	$0.75
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One Select Tested Queen	1.10
One Breeder Queen	1.65
One Comb Nucleus—no Queen	.80

Safe arrival guaranteed. For price on larger quantities and description of each grade of Queens send for Catalog. All Queens by return mail. A limited quantity of Comb Foundation. Send for sample.

J. L. STRONG

204 E. Logan St., · · CLARINDA, IOWA.

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Bee-Keepers' Supplies

at factory prices, f. o. b., San Antonio.

Weed New Process Comb Foundation

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Each, 75c; 6 for $4.00; 12 for $9.00. 6Atf

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Work red clover and other deep blooms. Hardy and gentle. Untested, 60c. Guaranteed, 90c. Tested, $1.15. Golden Queens for the same price. Leaflet, "Safe Plans of Introduction," 15c. Also "Rapid Increase," 15c. Or copy of each, 25c. 4A6t

E. E. MOTT, Glenwood, Mich.

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QUEENS

Clemons' strain of three-banded Italians has no equal. Mr. M. R. Juckett, Poultney, Vt., writes: "I have queens from seven different breeders, and yours are the only ones which have produced honey in the sections."

Mr. N. L. Stevens, president of New York Bee-Keepers' Society, Moravia, N. Y., who purchased of me in 1907, 46 of my cheapest untested queens, writes Jan. 22, 1909: "The queens I purchased of you in 1907 proved very satisfactory. I bought over 300 queens that season from 10 different breeders, and your bees averaged the best of any of them the past season, and only one strain was a close competitor. Your bees built up very rapidly, and were good honey-gatherers."

Why pay a high price for the common kind when others report such results? If you don't try a few of my queens we shall both lose money.

Untested queens, 75 cts. each; select untested, $1.00; tested, $1.25; fine breeding queens, $2.00 to $5.00. Safe arrival and satisfaction guaranteed. 7A4t

H. C. CLEMONS, Boyd, Ky.

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By return mail after June 1st or your money back. Bred from best **Red Clover** working strains in U. S. No better hustlers, gentle, and winter excellent. Untested, from my three-banded **Superior Breeder**—1, $1.00; 6, $5.00; 12, $9.00; after July 1st, 1, 75c; 6, $4.00; 12, $7.50. Special price on 50 or more.

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Choice Italian Queens

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One Tested Queen	.85
Six Tested Queens	4.50

Safe arrival guaranteed. 7Atf

JOHN LEININGER, Ft. Jennings, Ohio

BIG BARGAIN SALE
on Bee-Supplies

I have bought all the bee-supplies and machines of the Minneapolis Wood and Machinery Co. Send me a list of what you need, and get the right price. Also **Adel, Carniolan, Italian, and Caucasian Queens.**

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Twelve-page Circular in colors is taking like hot-cakes. If you have failed to get one, your library table is incomplete, and you have not learned of the two best races of bees on earth, the Pioneer Ranch of imported Italian and Caucasian bees. Just a postal gets it.

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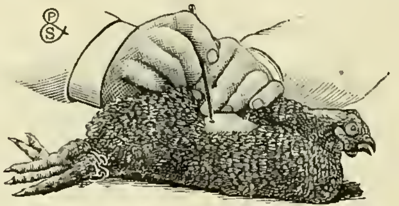
The Best Time to Caponize.

Fowls hatched any time of the year make fine Capons, but it is most important that the bird should be of correct size, that means, from 2 to 4 months although if they are not very large they can be Caponized up to 6 months. The size is equally important as the age. Fowls that are caponized in the summer months are best for the reason that spring chickens arrive at proper age and weight during these months, also because cockerels that are caponized arrive at the proper age and weight for market during the months of December, January, February and March, at which time is the greatest demand for them in the cities and the highest prices paid.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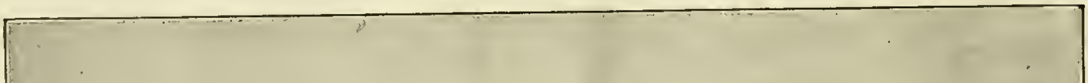
G P PILLING & SON. PHILA

Write to G. P. Pilling & Son Co., Arch St., Philadelphia, Pa., asking for their "Guide for Caponizing." It will be sent to any of our readers free of charge, if you mention the American Bee Journal. After reading this little pamphlet, get a set of the "Easy to Use" Caponizing Tools, read over the directions, and begin the work.



Minnesota State Fair Grounds

I WANT AN EXHIBIT OF MY BEE-SUPPLIES AT EVERY FAIR—STATE AND COUNTY—FROM MAINE TO MEXICO, FROM ATLANTIC TO PACIFIC

DEAR READER:—This is a personal letter to you: I want to meet you personally. You will admit that bee-keepers and manufacturers will understand each other better if they can come together and talk things over. I am planning to make exhibits at several State Fairs this Fall. Des Moines, Iowa; St. Paul, Minn.; Huron, S. Dak.; and Springfield, Ill., have been decided upon. I desire to be represented at other fairs by other persons. If you will write to me about it now so that we can get an exhibit to you in time, I will send the goods you are to exhibit, at carload rate, and I will pay the freight. Make out your list and enclose 10 cents and get my proposition, together with "**Bee-Talk**," an educational catalog, full of valuable information to experts as well as beginners. Yours very truly, **W. H. PUTNAM, River Falls, Wisconsin.**

SOMETHING TO CROW ABOUT

I am now shipping Sections to retail trade **PROMPTLY. MY OWN MAKE. NO DELAY.**

Send your orders direct to me. . . . **W. H. PUTNAM, River Falls, Wis.**

AMERICAN BEE JOURNAL
L.L.LANGSTROTH
CHAS. DADANT

(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

Published Monthly at 75 cents a Year, by George W. York & Co., 118 West Jackson Boulevard.

GEORGE W. YORK, Editor CHICAGO, ILL., JULY, 1909 Vol. XLIX—No. 7

Editorial Notes and Comments

The Season of 1909 So Far

There seems to be a very general complaint that the season has been cold and backward, giving not the best opportunity for bees to build up. As late as June 18 snow flurries were reported in New York State. There is also complaint in some white-clover regions of a scarcity of that plant. Your true bee-keeper, however, is a hopeful individual, and if the season should prove to be one of entire failure he will only the more hopefully look forward to what may be in store for him next year. Good seasons have been, and good seasons will be again. The crown is won by the faithful—those who refuse to become discouraged, no matter what may come.

◆

Easy Way for Increase

Two ways are given in the French bee-journal, L'Apiculteur, that are not recommended as the very best, but on account of simplicity may be liked by some.

First, where a single colony is at disposal. A is the hive containing the colony, which of course is strong, and B is an empty hive. At a time of day when bees are in full flight, take from A 2 frames of brood with adhering bees, being sure not to take the queen; put these in B, set B in place of A, and set A on a new stand 10 feet or more distant. That's all, the bees in B will rear a queen for themselves.

Second, with 2 colonies at disposal. In hives A and B are 2 strong colonies; C is an empty hive. Take from B its combs, all but one containing the least brood, brushing back into B all the bees, and filling up B with empty combs or frames filled with foundation. As each comb is brushed free of bees, set it in C, filling the one vacant space with comb or foundation. Set C in place of A, and set A in a new place 10 feet away. Do this at a time when bees are afield, all the better when they are out at play. The returning bees will populate C, and the colony will rear its own queen if you do not furnish one.

◆

Dates of Afterswarms

They are thus set down in the French bee-journal, L'Apiculteur:

> The second swarm issues about 8 days after the prime swarm.
> The third swarm 4 days after the second.
> The fourth 2 or 3 days after the third.
> The fifth 1 or 2 days after the fourth.
> The sixth 1 day after the fifth.
> The seventh 1 day after the sixth.
> And so on.

Do Yankee bees observe the same dates?

◆

Cities Planting Honey-Trees

Norwich, England, says the British Bee Journal, has ordered 14,500 trees for planting in its streets and public spaces. Nor is Norwich the only English city taking such action, London perhaps taking the lead, as indicated by the following:

> "The London County Council, indeed, maintains its own nurseries, and large tracts of ground at Avery Hill are reserved for rearing young trees, whose ultimate destinations lie in the various parks and public gardens of the metropolis.
>
> "The trees most commonly in demand are lime and plane trees."

As "lime" is simply another name for linden or basswood, it will be seen that this public action means a good deal to bee-keepers. As the linden is one of the finest shade trees, it might be possible in many a village or city for a bee-keeper by a very little influence to secure the planting of trees that would turn to his own profit. He might, indeed, well afford to furnish trees, to be planted and grown at public expense. And in smaller places, where tree-planting on the streets is a matter of private enterprise, a bee-keeper might make himself popular by planting lindens throughout the town, thereby getting a double benefit.

◆

The Illinois Foul Brood Law

Mr. Jas. A. Stone, secretary of the Illinois State Bee-Keepers' Association, sent us the following report, which came just a little too late for our June number:

> FRIEND YORK:—I have just found out the results of our efforts in the legislature Our appropriation bill came out all right, but the same old story for the foul brood bill. Both went through the Senate all right, but the foul brood bill was defeated in the house committee. There was the same old protest, backed up by all the untruth they could bring to their aid, and you know God's Word tells us who the father of lies is, and those who get his aid will not lack an argument, though it be ever so false.
>
> Two years ago their argument (only one man then) was, "The committee who are working for the bill are manufacturers of apiarian implements, and want to burn our hives so they can get to sell us more." This year (because they had been proven falsifiers before) they came a dozen strong with the same deceiving argument, that foul brood cannot be cured, and that the promoters of the bill are manufacturers of bee-hives, such as "C. P. Dadant, A. I. Root, and others," (and they named those two right out).
>
> We told the House Committee that these men were headed by the same party that did the same leading astray before, and that the false argument they put up all vanished when the law we asked was looked into, and we referred to it (by reading)—"In case the owner of a diseased apiary shall refuse to treat his bees, or allow them to be treated as directed by the foul brood inspector, then the said inspector may burn," etc. But they (except those friendly to our bill) paid no attention to our talk, nor to the petition from the Chicago-Northwestern Association, which we presented, but they were in the minority.
>
> We had 6 men in the committee who were our friends, and Mr. Pervier, from Mr. A. L. Kildow's district, was quite helpful to us. Had it not been so near the close of the session (the delay caused by the senatorial election) we could have killed the weight of the falsifiers, by giving the Committee the truth. (It is hard to stand before a committee that does not want to hear you.)
>
> The legislative committee of our Association are now asking the bee-keepers of this State, if we have all got to be exposed to the dread

disease of foul brood, just because one man has made up his mind that it can not be cured—because his bees have it and he does not try to clean up. We told the Legislative Committee of the House who the author of the protest was. before they read the names. We can tell you where you can find some of them (as we did in reading the proof) in the Eighth Annual Report, now about to come from the printer. in the report of the Chicago-Northwestern, when the motion was on the unanimous adoption of the resolution sent as a petition to the legislature.

And I wish to say right here, that when we asked (by request of the printer) for a copy of this petition. it had to be reproduced from the memories of those who heard it read, for the original could not be found among its friends!

These protesters ought to be treated as enemies to all bee-keepers, as well as to the manufacture of bee-hives and ought to be compelled to make their own hives, and consume all their own (foul-broody) honey, until they become American citizens, by being willing to live under majority rule. Jas. A. Stone, *Sec.*

Rt. 4, Springfield Ill.

It seems to us that the names and addresses of those so-called bee-keepers who helped to defeat the much-needed legislation on bee-diseases in Illinois, should be known. They should also be excluded from membership in any bee-keepers' organization. There is no good reason why Illinois should not have a bee-disease law equal to Wisconsin, Indiana, and some other States. The charge that it is a scheme of the bee-supply manufacturers is too ridiculous to consider. Whoever gave that as an argument against the passage of the desired law knew he was lying when he did so. Are our legislators going to listen to such specimens of "bee-fuddled" humanity, or to honorable men like Jas. A. Stone, C. P. Dadant, Chas. Becker, J. Q. Smith, and hundreds of others that might be named?

We shall see as time goes on.

◆

Queen Taking Her Wedding Flight from the Cell

L. Armstrong, in the Australasian Bee-Keeper, reports an unusual case. While he was watching a queen-cell held in his hand, the young queen emerged and immediately flew. At a distance of 7 or 8 feet from the ground he saw her meet the drone. In 4 days more she was laying. Mr. Armstrong says:

> "What I am the most impressed at, is a queen flying and getting mated straight from the cell.
>
> "I have never heard or read of the like before: had she got out of my sight, I should certainly say that it must have been another queen, that I saw mate. I have watched for years to see the mating between a queen and drone, but this is the first time that I have been successful in witnessing it."

This seems to conflict with the statement of the late Henry Alley that a young queen never goes on her wedding trip until 5 days old. But the conflict is more seeming than real. It is well known that virgins are often held in their cells by the workers, and it is not entirely impossible that in this case she was held in her cell until 5 days old.

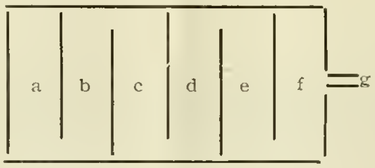
◆

The Gravity Honey-Strainer

The Bee-Keepers' Review has done good service by getting together information about getting impurities out of extracted honey by means of gravity, instead of using a cloth or metal strainer. For the most part what is to be strained out of honey is lighter than honey, rising to the top if given time enough. Some particles may be heavy enough to sink to the bottom, but the quantity of such particles is small. The problem is to provide a vessel, or series of vessels, in which the particles may be separated by gravity, such a strainer—if it can be called a strainer—always being in working order, avoiding the troublesome cleaning of the usual strainers.

In the ordinary strainer, if the mesh of the cloth be too coarse, some of the finer particles of wax, etc., will pass through. If too fine the honey passes through too slowly. Gravity works equally well on the smallest or the largest particles.

The construction of the strainer is simple. A plain vessel is divided into compartments by partitions that reach from the top to within a short distance of the bottom, alternating with partitions that reach from the bottom to within a short distance of the top. As the honey comes from the extractor it enters compartment a, and of course finds passage at the bottom into compartment b, the honey constantly finding its level in these two compartments. When they become full, the honey overflows into e, and then into f. When e and f are about half full, the honey passes out at g. It will readily be seen that when once filled all compartments will remain full all the time except e and f, which will never be less than half full. That gives time for gravity to take to the bottom any particles heavier than honey, and to the top all the lighter particles. The entire top being open, the scum can be taken from the top at convenience, there being no danger having once reached the top it will pass down under the opening at the bottom.



Of course, the slower the honey runs the more perfectly the strainer will work; and for large operators the strainer may be of larger size, and perhaps with more compartments than will be necessary for those obtaining only a small amount of honey.

◆

Honey a Popular Food

Mr. G. J. Moloney, of Minnesota, has sent us the following clipping:

Honey Becoming Popular.

Honey as a classic sweetmeat is likely to come into its own again. Since the days of the Pure Food Law, since folk can purchase honey and be sure that it is honey and not paraffin and brown sugar, the honey trade has swelled beyond all known proportions. Among a certain circle of friends there exists a rivalry as to who shall find the greatest number of uses for honey. Postcards pass between them daily, as thus: "Try honey on oatmeal," "Try honey on ice cream," "Honey in cordials," "Honey in coffee." One hostess is preparing a honey luncheon, with liquid honey, and honey in the comb, on the menu, and apple blossom honey, clover honey and buckwheat honey as well. The favors are to be bonbonnieres with bees on the covers, and the center piece will be large, yellow hive stuck with apple blossoms. It is certainly lucky the bees are busy in the country with the coming season, or they might strike for higher wages.

Finding the largest number of uses for honey would certainly be an interesting game for the good sisters or brothers to play. The post-card plan is all right, as intimated in the above clipping.

There is no doubt that the pure food law has helped the sale of honey, and is bound to continue to do so. We have contended for many years that there is not half the honey produced in this country that should be consumed. Some of these days its true value as a daily food will become known, and then it will take a great many more bee-keepers than there are today to produce enough honey to supply the demand.

The past two or three months we have had not only an advertisement, but also a reading notice in these columns, calling attention to a series of postal cards used by the Colorado Honey-Producers' Association to create a greater interest in the use of honey. They were offered to the general bee-keeping public at a very low price, and yet only two or three orders for these cards were received by the advertiser. We believe that bee-keepers are missing a great chance in not adopting the plan of sending such cards to their prospective customers. It is a very inexpensive way to attract the attention of the people to the use of honey.

Every bee-keeper should, so far as possible, dispose of his own honey crop in the local market. By so doing, he will not only realize a better price, but will avoid helping to overload the city market. It is all right to know how to produce a large crop of honey, but if one can not get what it is worth in the way of financial returns, it is not going to be such a profitable business, after all. For many years much space has been used in the bee-papers to tell just how to produce honey. It seems to us it is time to use a little more space in telling just how to dispose of the crop to good advantage when once it is secured.

We hope that those of our readers who have methods of selling honey in their local markets will kindly describe them in brief so that we may publish them. It is not necessary that your post-office address should be published, as, of course, it might interfere with the sales in your own market, or arouse needless competition. What we would like is to give a number of the best methods of selling honey in the home market so that our readers might be able to adopt at least one of them to good advantage.

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Taking Brood and Bees without Finding the Queen

In the management of bees it is often desirable to take from a colony one or more frames of brood with adhering bees. Along with the instruction to do this always goes the caution, "Be sure you don't take the queen." For a beginner that is the most troublesome part of the whole performance. There is a way to manage without paying any attention to the queen. Take out the frames of brood, brushing back into the hive all the adhering bees. Put a queen-excluder over the hive, or over any other hive containing a strong colony, set over this an empty hive-body into which you will put the frames of brood, of course covering it up. In a few hours a good supply of bees of the proper age will have gone up to cover well the comb, although for convenience it may be left till the next day to be used wherever desired.

For the experienced bee-keeper it will demand less time and trouble to find first the queen, setting aside for the moment the frame on which she is found and then taking out a frame with adhering bees. But even the experienced bee-keeper may sometimes resort to the foregoing plan with advantage. Suppose he wants for some purpose 6 frames of brood with adhering bees which he wishes to take away from as many different colonies. Instead of finding the 6 queens, he will take the 6 frames of brood from the 6 hives without taking any bees, and will set these 6 frames over a seventh colony to be supplied with bees. That will obviate the finding of 6 queens, and will be, at least in many cases, a saving of time.

It may be well to say in passing that this last proceeding may be used very satisfactorily in making artificial increase. After the 6 frames of brood are well covered with bees, it is a very simple thing to set the hiveful on a new stand, add a queen or a ripe queen-cell, and there you are with a full colony, and have not materially depleted any of your colonies unless it be the one which has furnished the bees. A few days later the operation may be repeated, letting the bees be drawn from a different one of the 7 colonies. It will readily be seen that this plan has the advantage that one need not fear being caught with a lot of weaklings on hand when fall comes, for no colony need ever be so reduced that it will not be ready for winter, and the new colony, having 6 frames of brood, is a good colony at the start. Indeed, unless it be late in the season, 4 frames of brood well covered will be safe, and if the 4 be mostly filled with sealed brood there can hardly be any doubt about wintering, no matter how late, especially as all the bees are young.

Miscellaneous News-Items

National to Meet in Sioux City

The Executive Committee of the National Bee-Keepers' Association, after making a full and careful investigation of all cities proposed for holding the next annual meeting, have decided unanimously in favor of Sioux City, Iowa, as the best place; and Wednesday and Thursday, September 22 and 23, 1909, as the best time for this year's convention.

Now that these important matters are settled, bee-keepers everywhere can begin at once to plan to attend. Sioux City is ideally located in the center of a large bee-keeping territory, and so should attract a big attendance.

Next month we hope to be able to present some of the interesting details of the meeting. In the meantime let all think of how they can arrange to be there and help make it a good convention.

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Illinois Convention Report

nois State Bee-Keepers' Association has nois Etate Bee-Keepers' Association has come to our desk. It contains 212 pages, 6x9 inches in size. Among its contents are the full reports of the last conventions of the Illinois State, Chicago-Northwestern, and National associations; also the code of rules and standard of grading exhibits at fairs, as adopted by the Illinois State Bee-Keepers' Association; 7 pages on "Foul Brood and Other Diseases of Bees," by N. E. France; and a lot of other very important matter, besides a full list of the membership of the Illinois Association. The book is well worth the one dollar membership fee, especially as it contains the only published report of the proceedings of the Chicago-Northwestern convention held in Chicago last December. That report alone occupies 71 pages. Send $1.00 to Secretary Jas. A. Stone, Route 4, Springfield, Ill., and not only become a member of the Illinois Bee-Keepers' Association, but in addition own a copy of the excellent Eighth Annual Report. Surely all Illinois bee-keepers should do this.

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Value of Sweet Clover

Sweet clover is generally considered a weed, and under certain conditions it is such. It, however, produces valuable forage in sections south of the clover belt. Stock do not like it at first, but they can easily become educated to eat it either green or cured.

Sweet clover is biennial and dies after the second year, hence to keep a field seeded it will be necessary to allow a good portion of the plants to go to seed in July. Steers pastured on sweet clover will make fine beef. The plants soon become woody and tough if allowed to grow too large.

The greatest value of sweet clover is as a soil builder. It will grow on land too poor to produce anything else. It is commonly found growing wild along railroad cuts, roadsides and other places where the top soil has been removed. In a few years it would reclaim poor land and make it capable of producing other and more valuable crops.—Farm and News.

This is interesting as coming from a prominent agricultural journal. It will be noticed that no mention is made of the plant as a honey-plant, though bee-keepers know it is. It is viewed merely from an agricultural standpoint as having value to feed stock and to build up soil. Slowly sweet clover seems to be coming into its own as not a weed but a valuable forage-plant.

◆

Apiary of G. W. Weldy

I send you a picture of my apiary, myself, mother and a lady friend. I started with 4 colonies 10 years ago in old box-hives. I run for comb honey only. I make my own hives—10-frames. In 1908 I had 7 colonies to produce 875 pounds of comb honey, or 125 pounds to the colony.

Lewistown, Ill. G. W. Weldy.

◆

Mr. Hutchinson's Hospital Experience

W. Z. Hutchinson, editor of the Bee-Keepers' Review, unfortunately was compelled to spend several weeks in a hospital in March. He had an operation for what is called "mastoids." It is a disease of the bone just back of the ear, called the "mastoid bone." He was under an anæsthetic for three or four hours, but endured the operation very nicely, and is getting along all right now. His many friends will be glad to know that he will soon be himself again.

◆

Mountain Apiary of Ludwig Brendle

I herewith send you a picture of my apiary, which is located in the northwestern part of the State of Arkansas, 16 miles from the Arkansas River, in Johnson county, right on top of Mulberry Mountain. I have 36 colonies of bees, which are doing nicely so far. I had 2 swarms in April. My crop for 1908 was about 1200 pounds—mostly comb honey. I have a good home-trade. I sell my honey for 12½ cents a pound. I have "A B C of Bee-Culture," and also take the American Bee Journal. I use the standard 8-frame hive with the Hoffman frames. The people in the picture are myself, wife, and baby.

Linville, Ark. Ludwig Brendle.

◆

The Lewis Factory Burned

We received the following from G. B. Lewis Company, of Watertown, Wis., June 25, 1908, it being a sample of the notice they sent to their customers concerning the disastrous fire which wiped out their well-known bee-supply factory on June 20:

You are no doubt aware by this time that our factory was completely destroyed by fire Sunday morning, June 20, 1909. The fire started on the upper floor at about 6 a. m., from a cause unknown, and in a very few hours it was a complete loss. Owing to favorable wind conditions, the office, lumber yard and adjacent property were saved.

The destroyed property was well insured, and while it will be impossible to resume business this season, it is our intention to rebuild at once. Our new plant will be better and larger than the old, fully equipped with modern machinery and conveniences, and will have additional facilities, making it the best in the world. It will positively be ready in time for your next year's business. We suggest that you endeavor to have your requirements for the rest of this season filled at one of the other factories.

This is but a formal announcement for the time being. Our office will be in shape in a day or two, so that all matters concerning you individually can be taken up with you as heretofore.

Apiary of J. C. Cunningham, of Streator, Ill.

Trusting that our past relations with you have entitled us to a continuance of your loyalty, which we assure you has been greatly appreciated by us during our past years of business dealing, we beg to remain,

Yours truly, G. B. Lewis Company.

Such a fire is very unfortunate, indeed, especially just at this season, when bee-keepers require their supplies promptly and in such large quantity. It will probably cause the other factories to work more overtime than ever now.

Of course, the customers of the G. B. Lewis Company will be patient under the circumstances, which are so trying to both sides alike. No doubt by another season the new factory will be abundantly equipped to meet all its demands.

◆

City Back-Lot Apiary

I am sending a picture of my apiary. This little yard is located on the back of my city lots near the alley. You are looking southwest, and the buildings that you see are on the street south of me. My bees never trouble any one. They are all Italians but 2 colonies, and I am going to requeen them this spring. Bees are wintering well. This has not been a hard winter on bees, and I think they are coming out strong.

J. C. Cunningham.
Streator, Ill., Feb. 8.

◆

Iowa State Fair List

The Iowa State Fair for 1909 will be held August 27 to September 3, at Des Moines. The apiarian premium list is as follows:

	1st	2d	3d
Largest and best display of comb honey, not less than 300 lbs....	$20	$15	$10
Largest and best display of extracted honey, not less than 100 lbs.....	20	15	10
Case of comb honey (clover or linden), not less than 12 sections..	5	3	2
Case of honey (fall flowers).....	5	3	2
Extracted honey (clover), 10 lbs..	5	3	2
Extracted honey (linden), 10 lbs..	5	3	2
Extracted honey (sweet clover or alfalfa), 10 lbs.	5	3	2
Extracted honey (fall flowers), 10 lbs.	5	3	2
3 extracting frames comb honey, shown separately	3	2	1
Display of beeswax, not less than 20 lbs.	6	4	2
Display of designs in beeswax......	6	4	2
Golden Italian bees with queen, one for observatory hive...........	5	3	2
Dark Italian bees with queens one for observatory hive	5	3	2
Carniolan bees with queen, one for observatory hive	5	3	2
German bees with queen, one for observatory hive	5	3	2
One gallon of honey-vinegar (with recipe) shown in glass.........	3	2	1
Sweepstakes.			
Largest and most attractive display of comb and extracted honey, wax, bees, implements, etc., owned by exhibitor		25	15

Hon. Eugene Secor, of Forest City, has been judge of the apiarian department of the Iowa State Fair for a good many years, and it was at his suggestion that the Board liberalized and enlarged the list to the above proportions. It seems the room for the apiarian department is rather limited, and it is thought that if the Iowa State Board of Agriculture would furnish the space it ought to have, a splendid exhibit would be installed.

For any further desired information, address Mr. Secor, as above.

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Apiary of W. A. Swearingen

The apiary as shown in the picture is what we call the home yard. It is situated behind the machine shop. We try to keep as pure Italian bees in this yard as we can by buying an imported queen every third year and rearing all queens from her except where some queen shows that she is an extra-good honey-gatherer. We keep about 50 or 60 colonies in this yard.

The picture also shows my wife and children.

Bees were weaker this spring than I ever saw them, but we had one of the heaviest of locust blooms this year, and it has helped the bees to build up wonderfully fast. Most of white clover this year will be from seed, as most of the old plants were killed by the drouth last year. But the season so far has been very favorable to its growth, and it is looking as well as can be expected.

We are having one of the heaviest of blackberry blooms here, and I have one or 2 colonies that are storing in sections from that source; also several at the extracting yards are storing from the same source.

W. A. Swearingen.
Epworth, Ky., June 2.

◆

European Foul Brood in California

Samples of a new outbreak of European foul brood in Fresno and adjoining counties in California, were received at the Bureau of Entomology, Washington, D. C., the forepart of last month. This disease seems to be new to that part of the country, and so it will be well for bee-keepers to be informed concerning the danger. Any suspected samples may be sent for identification to Dr. E. F. Phillips, in Charge of Apiculture, Bureau of Entomology, U. S. Department of Agriculture, Washington, D. C.

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Nebraska Fair Apiarian List

The 41st annual Nebraska State Fair will be held at Lincoln, Sept. 6 to 10, 1909. The premiums offered in its apiarian department are many and varied. If more information is desired, write to W. W. Cole, of Neligh, Neb., who is the superintendent. The following is the premium list as published:

Apiary of W. A. Swearingen, of Epworth, Ky.

> All bees and honey competing must have been produced by the exhibitor; and all honey

must have been produced during the present year, unless otherwise specified.

BEES AND HONEY—OPEN TO THE WORLD.

	1st	2d	3d
Best comb basswood or white-clover honey, not less than 20 pounds, crated and in single-comb sections, weighing not more than 2 pounds each	$5	$3	$2
Alfalfa honey, the same amount and crated as above	5	3	2
Sweet-clover honey the same amount and crated as above	5	3	2
Fall honey, the same amount and crated as above	5	3	2
20 pounds extracted white-clover, or basswood honey	5	3	2
20 pounds extracted alfalfa honey	5	3	2
20 pounds extracted sweet-clover honey, produced during present season	5	3	2
20 pounds heart's-ease honey, to have been produced any time since August 1 of previous year	5	3	2
20 pounds extracted alfalfa fall honey, to have been stored after August 1.	5	3	2
Largest display by anyone, including bees, extracted and comb honey	12	8	6
Most artistic designs in beeswax	4	3	2
Display of honey in marketable shape, products of exhibitor's own apiary	9	6	3
Displays of bees and queens in observation hives and not allowed to fly, not less than five cages	6	3	2
Demonstration of practical apiary work	6	4	2

1.—HONEY-HOUSE OF J. M. CUTTS.

General display of bees, honey and apiarian products ....$25 Silver Cup.

To become the property of the individual winner only after three successive annual winnings.

The following are confined to exhibitors in Nebraska alone:

HONEY-PRODUCING PLANTS.

For the best collection of honey-producing plants, giving time of blossoming, with common and proper names, and furnish the Secretary a complete write-up for publication	$7	$4	$2

DISCRETIONARY.

In this lot make entries, when desired, of what is not provided for in the foregoing lots in this class.

SPECIAL PREMIUMS OFFERED UNDER THE AUSPICES OF THE NEBRASKA STATE BEE-KEEPERS' ASSOCIATION.

Best 5 pounds beeswax, one year's subscription to Gleanings in Bee Culture.

Best 10 pounds extracted honey, one copy of "How to Keep Bees"; cloth bound, value $1.10.

Best nucleus of Italian bees, 1 Standard Root Copper Smoker.

Best single case of comb honey, 1 copy "A B C of Bee-Culture," cloth bound.

Most interesting display of bees and queens, 1 copy "A B C der Bienenzucht," (German).

Largest display of different races of bees, 5 pounds Root's Weed Process Comb Foundation, 1 pound each—Medium Brood, Light Brood, Thin Super, Extra Thin Super, Drone Foundation.

Finest frame of honey for extractor, 100 Hoffman Brood Frames.

Largest and best exhibit of comb honey, 1 Danzenbaker Comb Honey hive, painted.

Largest and finest display of extracted honey, 1 Hatch Wax Press.

Largest and most interesting display in this department, 1 Ball-Bearing Root Honey Extractor (two-frame) No. 15 B.

Best case of white comb honey, not less than 20 pounds, 1 copy "Langstroth on the Honey Bee,'" Twentieth Century Edition, cloth-bound.

Best case sweet clover comb honey, not less than 20 pounds, 1 copy "Langstroth on the Honey Bee."

For best 20 pounds extracted white clover honey in glass packages in marketable shape, 1 year's subscription to the American Bee Journal

For best display of designs in beeswax, 1 year's subscription to the American Bee Journal.

For best collection of honey-producing plants, 1 year's subscription to the Bee-Keepers' Review.

Best and largest display of alfalfa comb honey in 4x5 plain sections, 1 Danzenbaker comb honey hive, painted.

Best display of sealed combs for extracting, 1 two-story Root Dovetailed Hive, for extracted honey.

For best case of comb honey, not less than 20 pounds, produced by a woman bee-keeper, 1 select tested Italian queen.

For best display including bees and honey, made by boy or girl under 18 years, products of exhibitor's own apiary, 1 Golden Italian breeding queen.

For best demonstration of live bees in practical apiary work in screened wire cage, exhibitor to choose topic, 1 red clover Italian breeding queen.

For best and most instructive display of apiarian products, including bees, comb and extracted honey, beeswax, not less than 50 pounds designs in beeswax, and original home-made apiarian appliances, all products of exhibitor's own apiary; subject to above restrictions as to Special Premiums—Silver Trophy Cup, value ....$25.00.

This cup is to pass annually from prior winners until won three years successively, when the ownership shall become permanent.

2.—SWARMING IN J. M. CUTTS' APIARY

God Help the City Boy.

God help the boy who never sees
The butterflies the birds, the bees,
Nor hears the music of the breeze
  When zephyrs soft are blowing.
Who cannot in sweet comfort lie
Where clover blooms are thick and high,
And hear the gentle murmur nigh
  Of brooklets softly flowing.

God help the boy who does not know
Where all the woodland berries grow,
Who never sees the forests glow
  When leaves are red and yellow.
Whose childish feet can never stray,
For such a hapless boy I say
When Nature does her charms display—
  God help the little fellow.

—*Nixon Waterman.*

Views of the J. M. Cutts' Apiary

Enclosed find some views of my apiary near Montgomery last year.

No. 1 shows the honey-house or shop; No. 2 shows how I climbed the tall pines, with climbers to get the swarms that would often settle 60 feet from the ground; No. 3 shows a general view of the apiary and how some of the 10-frame hives run for extracted honey were tiered up 4 stories high and filled with honey. This apiary of 150 colonies was run for both comb and extracted honey—about one-half of the colonies for comb and the other half for extracted. The total yield was 12,000 pounds. This was far short of what it should have been, as I lost a great many swarms, because I could not be with them in the middle of the day.

I sold this apiary last winter to the former owner, having purchased it of him in the spring of 1908.

J. M. CUTTS.

Montgomery, Ala., May 25.

Isle of Wight Bee-Disease

Some time ago mention was made of a disease among the bees on the Isle of Wight, England, that had practically cleaned all the bees off the island. It seemed difficult to get any definite idea about it, but the idea was more or less prevalent that it was a new disease. Official investigation has been made, and a summary of results is given in the British Bee Journal. In the course of the article it is said:

"Dr. Malden finally directed his attention to the contents of the chyle stomach of healthy and diseased bees, and here he was able to distinguish in the latter certain plague-like bacilli which were not present in healthy specimens, and these organisms he is led to believe are the cause of the disease. In stained film preparations the bacillus appears as a short, round-ended, thick organism, with darkly staining ends and lightly staining central bands (polar staining), and closely resembles *B. pestis* in general appearance. He therefore proposes to name it *Bacillus pestiformis apis.*

"The characteristic features of the disease are a more or less rapid mortality amongst the bees, disinclination to work, some distension of the abdomen, frequently dislocation of the wings, and, later, inability to fly. The disease can only be recognized by observing the general conditions of the colony."

All of which is of no immediate interest to bee-keepers on this side of the ocean, except as a bond of sympathy connects us with bee-keepers everywhere; but there is no telling when a case of the disease may break out in this country, and it is well to be somewhat informed in advance.

3.—APIARY OF J. M. CUTTS.

Spider-Plant

G. Thomas says, in the British Bee Journal, that spider-plant will grow in England only in the hothouse. It grows very freely in this country as far north as Northern Illinois.

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Feeding Sour Honey — Using Last Season's Empty Comb.

1. Is sour honey fit to feed the bees? If so, bow, and when is best to feed it?
2. Will honey-comb that was left in the hives last fall do to put hack for them to fill this spring, for comb honey to sell?

KENTUCKY.

1. You don't say whether the honey is in the comb or extracted. If extracted it can be heated and skimmed, then diluted with water until thin enough, for the bees to take easily. If in the comb, feed just as it is, only in either case feed at a time when bees can have a flight every day. In no case is such honey fit for winter stores, or to be fed at a time when bees can not fly freely.

2. Everything depends upon the condition of the comb. If the sections have been emptied of all honey, and are white and nicely cared for, there is nothing better. On the other hand, if they have been left with the bees until coated with propolis, and are brown and hard, they will not make nice sections when refilled.

Honey Poultice for Swelling.

Mrs. L. underwent a severe surgical operation in the spring of 1907, as related in Leipziger Bienenzeitung. Six months later a swelling in the left temple, with an inflamed spot in the center and severe pain in the head. Different domestic remedies were tried in vain to bring the inflamed spot to suppuration. The lady could not be induced to call a physician for fear of the knife.

On the suggestion of a bee-keeper honey-plasters were daily applied. The result was very favorable. The swelling came to a head and broke. The discharge continued for about 2 weeks, during which time a fresh honey-plaster was applied daily. Gradually the pain disappeared. Before the place was entirely healed, Mrs. L. called on the physician to pay her previous bill. Upon noticing the nearly healed place, he told her it was a case of a dangerous carbuncle. When told of the remedy applied, he said, "I wouldn't have believed it; but honey seems to be good for everything."

Honey for Cancer.

Miss Florence J. Prugh, of Piqua, Ohio, kindly sends the following clipping on the use of honey as a remedy for cancer and other blood diseases:

It is passing strange that so many of nature's valuable secrets should be before us every day, yet we remain unconscious of their existence until some one discovered that honey is a safe, certain and sure cure for cancer and all other blood diseases.

A farmer had contracted blood poison from helping to lay out a friend, and, after two years' treatment, had been given up to die by doctors and friends, and had made his will. Honey harvest had been unusually heavy that year, and he noticed that as soon as he began eating it he began to improve, and in a few weeks the symptoms disappeared and have never returned. Since then he has cured three very bad cases of cancer, two of blood poisoning, one extremely bad case resulting from vaccination, one of eczema and one of eruptions on the face.

The honey should be strained, as the virtue is in the nectar, and taken very moderately at first, taking a tablespoonful only three times a day, gradually increasing until as much as a gill can be taken at a meal with impunity. Every one afflicted with cancer or blood disease of any kind should give the remedy a fair trial, as it is cheap, safe and sure. For many years they have been trying to find a remedy for cancer. Here it is; give it a trial and be convinced.

A certain doctor to whom I gave the remedy free, asking only that he make public the discovery, has been planning to coin millions out of the afflicted people's pockets. I want every one to know and use it free. It is Nature's medicine.—Wesley Clowes, in Macomb Journal.

A Good Year—Catalpa for Honey.

DEAR MISS WILSON.—1. Will this be a good year for honey? I put the supers on the first week in June. One colony is busy in them. The other 2 are not doing anything.

2. Do they fill up the center first? They are killing off the drones; seem very busy. They came through the winter in fine shape.

3. Do the bees work on the catalpa trees? They are in full bloom now. The bees are too busy to swarm.

The American Bee Journal has been very helpful to me. MRS. E. P. DAY.

Bloomington, Ill., June 18.

1. Up to June 21st it is an exceedingly poor year with us, as the bees are having to be fed to keep them from starving, when they should be rolling in the honey. But we may have some fall crop. Never can tell. But that doesn't mean that it must be a poor year with you. You say that one colony is busy in the super. That looks promising, although later you say they are killing off drones. That would indicate that the flow is not very good.

2. Yes. Usually the outside sections are finished last, and this is more pronounced if the harvest is poor.

3. I don't know. I never heard the catalpa tree mentioned as a good honey-producer. You can tell something about it by watching to see whether the bees work upon it.

Honey Prospects Discouraging.

The prospect of any crop from white clover in this locality is now (June 21) very poor indeed. There is very little clover to begin with, and there doesn't seem to be any nectar in what there is, at least the bees are not gathering enough to keep them. June 16, the very time when honey should have been coming in a flood, we were giving the bees reserve combs of honey to keep them from starving. There is some alsike clover within reach, but not enough for their needs. Yet it is hard to tell, for the weather has been so cold and wet that the bees have been kept indoors a good deal, and even if they could have flown, such weather is not the best for the secretion of nectar.

Bees have been cross and snarly. It is hard to keep your enthusiasm up to the proper pitch when they behave so.

Color of Raspberry Pollen.

Raspberry pollen is yellowish green in color.

Hearing Rather than Seeing Bees.

The ear is better than the eye when one wants to find whether bees are working well on any given source. Stand under a basswood tree and if bees are not very thick upon it you can easily hear them when you can hardly see a bee. Same way on a field of alsike.

Yellow Sweet Clover.

We have a patch of several square rods of yellow sweet clover. It blooms much earlier than the white variety; does not grow so tall, and has a more slender leaf. In fact, aside from the blossom, the plant resembles alfalfa fully as much as it does white sweet clover. This year it showed its first bloom on the same day as white clover (June 6), as also did alsike. The earlier blossoming of yellow sweet clover makes it of less value than the white variety in a good white clover year. But when white clover is a failure the yellow sweet clover ought to be especially valuable.

A Vermont Sister's Experience.

DEAR MISS WILSON.—I have been a reader of the American Bee Journal for several years, and have found it a real friend. I became interested in bees 7 or 8 years ago. I live on a farm on one of the prettiest locations to be found anywhere, without any exception. From my dining-room windows we look down the length of beautiful Memphramagog Lake, and one side Owl's Head and Bear Mountains, and with the valleys and evergreen forests, the view must be seen to be appreciated. Our neighboring meadows were laden with alsike and white clover, and I thought what a pity so much sweetness should be lost and given to the winds. I said to my husband, "I wish I had some bees. I believe I could handle them." But no bees for him, he said. He would take care of the honey, but the bees he would let some one else care for.

Well, I succeeded in getting a swarm in a box-hive for $5.00. I went to our library and found a book, "A B C of Bee-Culture." I wrote to Cornell University, Ithaca, N. Y., for information, and they referred me to the American Bee-Keeper. I subscribed for that journal and continued to take it until they discontinued. I subscribed for the paper and bought Langstroth on the Honey-Bee." I wintered 32 colonies. I sold a few this spring. Several of my neighbors have since become interested in bees and keep from 6 to a dozen colonies. My husband was called Home two years ago, and with the care of a 14-cow dairy and poultry farm, I do not get down to do very fine work in apiculture, but have made the bees pay for themselves, and all cost besides. I have a bountiful supply of honey for my own table, some profit, and lots of real pleasure also.

How did I manage the stings? Just as we

have to learn to overcome all the disagreeable obstacles that come in the path to higher attainment. I believe now I have become so inoculated from the stings that I shall never be troubled with rheumatism. That's what some doctors say, "stings cure rheumatism." But really my bees are so well acquainted with me now that they are very well behaved, and I forgive them for all their ill temper, for I suppose I must have been very awkward with such methodical little things. But I have lots to learn.

When you people in the American Bee Journal run up your honey crop into the thousand pounds, and the way you do away with swarming and increase, by the modern methods, and talk to your queens and have them rear none but workers, well, I am not in it, and I must sit quietly and listen and learn from the skilled in bee-culture, for my bees know only natural methods, and as I have gone to the bee for many of my lessons and consider her very wise and thrifty, I must wait until I know more than I do before I shall dare to interfere with her methods.

One of the sisters that wrote in the last Journal was from this State, and I was glad to know of another bee-woman. I do think the sisters can help to make our department as wide-awake and interesting as any in the Journal. Let all those who have profited and do know just as much as the brothers (though they may not think so)—just let us know what they think of introducing new queens into an apiary where the old queens have reigned so long.

EMMA S. LANE.

Newport, Vt., June 5.

Don't get the idea, Sister, that to have success in bee-keeping we must get away from natural methods. Rather we should strive to learn more fully just what bees naturally prefer to do, and govern ourselves accordingly. You are on the right road toward getting yields equal to the best of us, so keep up heart.

Do you really think your bees are better acquainted with you, or have you learned better how to behave in their presence? And yet it can not be disputed that when a colony stands where people are constantly passing, the bees are gentler than where they are in some secluded place.

With regard to changing queens, while there are some who think a queen should not be tolerated beyond one or two years, others think it best to leave the matter entirely in the hands of the bees—to "natural methods," as you would say—so long as good work continues. If left to themselves, bees will generally supersede their queens when 2 or 3 years old. In our own apiary the age of a queen is no objection so long as good work is done, and if poor work is done, off comes the queen's head, no matter how young she is. Last year the colony which gave the biggest yield (276 sections of honey) had a queen 2 years old, and the next best had a queen 3 years old.

Yes, we shall be glad to hear what other sisters think about introducing new queens.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

The Honey Season in Ontario.

Our late cold spring terminated abruptly into warm summer weather about May 25, and since then it has been quite warm with but little rain. Fortunately the abundant precipitation earlier in the season, had put the clover in fine shape, and at present the rather dry weather now prevailing has not hurt it any yet. Apples were in bloom on June 5th—very late for our locality—but the clover rushed ahead so fast that it came into bloom about the same time as in earlier springs. While the weather during apple-bloom was fine and warm, yet strange to say, very little nectar was secreted. However, the fine flow from the willow earlier in the season, coupled with abundance of old stores in the hives, brought the bees up to the clover flow in fine condition. Clover started to yield June 19th, and, for the 4 days since, the nectar has been coming in fine, and from present indications only unusual weather conditions will prevent a crop of honey.

But last year the clover started in fine and yielded for only about a week to amount to anything, and there is the same possibility this year again. Of course we are not looking for a repetition of last year's slim crop, but, on the contrary, are full of hope for an old-time yield again. The next 4 weeks will tell the tale.

Introducing Queens.

The Sibbald quick method of introducing queens as mentioned in the June American Bee Journal has proved entirely successful with me so far. A severe test was made last week and as it proved a success, naturally I have considerable faith in the plan. A queen was received by mail, which on examination showed the wings all frayed, convincing me that she could never have flown, so must be a virgin. I wrote the breeder, but decided to introduce her and prove the matter. The queen was introduced by the plan as given last month, and today I found her as I expected—a drone-layer.

If one can introduce virgins or drone-layers by the plan, it certainly should be a sure method for laying queens.

Speaking of introducing queens, leads me to recall a little incident that happened today, an incident by the way that some will wonder at my relating. Really, though, I wonder if any other bee-keepers do have accidents and make blunders like the writer of these notes, anyway.

It came about in this wise: One of my very best colonies at the Cashel yard, headed by a young queen of last year's rearing, was given a second story of worker-combs early in the season, no excluder being placed between the two stories. Today I found the top story as I expected—full of brood and honey. The brood was taken away and given to some other colonies not so strong, an extracting super being given to the other in place of the combs taken away. Now in doing this work, I was more careful than usual, and although I did not see the queen, yet I thought she had run down into the second or lower story all right.

After dinner, when I came out to the yard again, I noticed the colony all in an uproar, and knew at once that the queen was somewhere not in the hive.

As I had shaken the bees all in the super as the combs were taken away, I felt pretty sure that she was not carried away on the combs, so I looked all around the hive. Noticing some bees about 6 feet away to one side, I went and investigated and found about a dozen of the poor bees clustered around the queen which was *dead*. How it happened I can not imagine unless she had been right on the quilt when I opened the hive, and had, unobserved by me, run down the side of the hive and into the grass, later on to be trod upon by my very clumsy feet. While I would not have taken a five dollar bill for her, yet I had taken a good deal less, and here was a queenless colony to fix up somehow right in the opening of the clover flow. To patch up a bad bargain, I decided to take a young Italian queen out of a nucleus wintered over, and give it to them. How to introduce her to that powerful colony was the next question. I got a wire cage and put into it the dead body of the old queen which the bees were simply crazy over, then I also put the new queen in as well, and laid the cage at the entrance of the hive.

The bees formed in a great ball around the cage, and from their actions I judged they were amiable rather than otherwise towards *all* the contents of that cage, and in about 10 minutes I pulled out the cork and let her run the hive.

Well, the bees simply quieted down about as quick as a pan of syrup boiling over will settle when a lump of butter is dropped in. At night, before leaving I could see nothing of a dead queen in front of the hive in the closely clipped grass, and from the quiet condition of the colony I have good reasons to believe that the new queen was safely introduced in less than 9 hours after the old queen was *superseded*, and this right in the middle of the day, too.

Try the plan of introducing, but by all means do not try the plan of superseding, on any good queens you have in the yard.

Cellar-Wintering of Bees.

In the February issue of this Journal, mention was made of the experience of Editor Hutchinson last fall in moving some bees a short distance to the cellar, after they had been confined to their hives by a half-depth body screen on the bottom for ventilation, it being the intention to leave this screen on the hives all winter so that the bees would not be able to leave the hives at all, a la Hershiser. After the bees were shut in, and before they were put into the cellar, the weather turned quite warm, and as a natural result the bees were very much excited and very uneasy when put into the cellar, and for some days afterwards. In commenting on the experience of Mr. H., I said that I would not like to have my bees in that shape, but hazarded the guess that all would be well, provided the stores were of the best.

In the April Review, Mr. Hutchinson tells of the results of his experiment, and I am sorry to say that it is not of a very encouraging nature. The bees remained very uneasy and had to be put out of the cellar in January, and if the winter had been severe the chances are that the loss would have been very heavy, but as it is he expects to pull through with a loss of 25 percent. He, of course, blames the disaster to the fact of the bees being shut in the hives, but personally I would be inclined to blame the *abnormal* condition under which the bees were put into the cellar.

When I said that I would not like to have my bees go into the cellar in that condition, I had in mind that abnormal condition, and never thought of the bees being confined to the hives, as being a cause of bad wintering. True, I did jokingly say that Mr. Hutchinson was using a device which he had characterized as a "harmless invention," in that he was confining the bees to the hive as did the Hershisher bottom-board, but there is a vast difference between a screen at the *bottom* of a hive-body as compared with the Hershisher device that has the screens at the *side*. In the former case the dead bees would fall on the screen and shut off ventilation.

Be it understood and right here that I hold no brief for Mr. Hershiser, and have no actual experience with his closing device, but as I understand its construction, I would have no hesitation in using it if I were doing much cellar-wintering.

Let us consider for a minute the condition those bees of Mr. Hutchinson's were in when they were put into the cellar. If they could have been put into the cellar as soon as they were shut in, the chances are that all would have been well, as there are numerous instances where bees have been moved and put into the cellar without having had a flight after the moving. However, I believe that all of us think it better for the bees to have a flight in such cases if it is possible. In the case referred to, the bees were shut in and moved off the stands, and then the weather turned very warm. This naturally aroused the bees to a great pitch of excitement, and as they were kept closed and then carried into the cellar while all in an uproar, it would not surprise me if bees in that condition should develop dysentery inside of a month. It is quite possible, as all who have shipped bees much know, to develop a case of dysentery in a colony even in the summer time; especially is this true of some of the more excitable strains of bees.

Mr. Hutchinson says, "When the schoolmaster or the parent, or the editor, makes a mistake, there always seems to be a lot of enjoyment on the part of the children or the subscribers, and it is possible there will be something doing," now in that line. If he means that *we* "children" are going to rejoice because of his failure, I venture to say that he is making a bigger mistake than he did when he roused those bees up so before putting them in the cellar.

While it is true, as he says, that his characterization of the Hershisher bottom-board as a "harmless invention," did afford "a lot of interest to our Canadian friends," I hasten to remind him that both he and Mr. Hershisher know the writer of these notes well enough that they must surely have discovered ere this his weakness in being inclined to treat some things with the spirit of levity, and perhaps failing too often to treat the things of this life in a serious enough manner. This will be my excuse if I have in the question under discussion, said anything that would have been better left unsaid.

Distance Bees Go for Nectar.

What G. M. Doolittle says in the June number about the distance bees will go for nectar, does not in my opinion give so much encouragement to the idea that bees *ordinarily* fly as much as 4 miles or more. The pasture gradually extending up a hillside, link by link, as was the case with the basswood in the years he recorded such long flights, is something that does not occur in many years in most localities. Under such conditions, one can readily imagine that bees would fly much farther than they would when great blank spaces, in so far as nectar is concerned, have to be passed over. Be that as it may, I know that our home yard of bees have in years past got nothing whatever when 3 miles away where there was buckwheat, bees there would be storing a good surplus.

As far as I am concerned, under ordinary conditions, I do not take into account any possible value of forage over 2½ miles away, as time after time I have seen incidents as related about the buckwheat 3 miles away. Had there been patches of buckwheat scattered all along the 3 miles I can readily believe that the bees might have found the large acreage at the end of the chain, but there was absolutely nothing to connect with the source of nectar, consequently it was never found by the bees.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Bee-Stings for Rheumatism.

Although this is an old story, there are many doubting Thomases who do not believe that bee-stings can be used as a successful cure for rheumatism. The writer was one of these for a long time, although leaning toward the belief that there might be something in it, until several years ago when I was so thoroughly convinced that I have been not only an advocate of such treatment, but have applied the treatment both to myself and to other patients with success.

It is needless to say that a cure can be effected for all kinds of rheumatism, perhaps. However, all the cases of which I know, a cure was made in every case. I do not know of a single case where the bee-sting cure failed, and some twenty cases of treatment can be referred to.

Several persons have told me that after suffering for years, and having tried all the doctors and patent medicines, besides trying different "baths" at various resorts, which had been recommended to them, without avail, their last resort was "bee-stings," and now they are well. Some have stumbled on this "cure" accidentally, tried it, and were cured, while others had known of bee-stings as a relief for rheumatism, but who dreaded this kind of cure more than the disease. Later, being finally driven to "bear it and grin," the bee-stings were tried and the patients were healed.

For a time—possibly about 3 years—I suffered more or less from rheumatism in one arm and one leg. This was during a period in which very little work with the bees was done by me, and hence I was not stung often. Later I took up bee-keeping again, but without the least thought about my rheumatism and the connection bee-stings might have with it. It was not until late in the season that I became aware that my pains were gone. The numbers of stings received in the work ran into the hundreds, and I am sure that they cured me. Never since then have I had any more trouble with rheumatism, and neither is its return expected unless the bee-stings are left off entirely. Then if such should occur my first remedy would be *bee-stings*.

One of my relatives, and next door neighbor, suffered so severely with rheumatism that he had to give up work entirely for months. All kinds of medicines and doctors had been tried, and mineral as well as other baths, but no permanent relief was obtained. Almost despairing he requested enough of my time to apply the "bee-sting cure." It was agreed that if he would stand the pain I would apply the stings, and after several weeks' treatment he was well. It will be well to say that this was a very severe and obstinate case, and required several hundred of the stings, which were taken in the morning and evening.

Swarm Entering Empty Hives.

My present assistant at an early age was afflicted with rheumatism to such an extent that he was practically an invalid. His sufferings were unbearable, and all the treatments gave no relief. He and his relatives had heard of, and were advised to try bee-stings, but the relatives scorned such a foolish idea. Having the grit which we know only too well a young fellow in his condition can have, he one day, when all were away, slipped out to his uncle's bees. Although the pain was severe from the stings applied by himself, he was determined to get well. Relief was soon felt afterward, and the application of stings continued. He was cured, and is well to this day; and he does not expect ever to suffer so again as long as he is with the bees, which business he at that time took up and expects to follow for the very purpose in which he earnestly believes—that as long as he receives stings while working with the bees he will be free from the dreadful torture from rheumatism.

Many other cases could be cited which I know personally, while many others have been related to me in detail. Upon several occasions cases have been cured upon my suggestion after everything else had been tried.

There are several persons who have had like experience as above related, and who can bear me out in this kind of testimony.

Scouts Before a Swarm.

There are many evidences that a colony of bees that is preparing to swarm will select previously a location for a new home by sending out "scouts," or a number of bees whose duty it is to go out and find a suitable place to which the swarm then proceeds later.

The writer has seen a number of instances to this effect during the sixteen or more years of his bee-keeping observations. The first, years ago, was when I thought I had discovered a swarm of bees in the wall of a building. Bees were issuing back and forth from a knot-hole right under the eyes. But after a few raps were made on the wall they soon dispersed. As a forethought, or fearing that some day a swarm might enter there, the opening was closed up with soft soap. Seven days passed by when about noon a roaring noise near the building proved to be a very large swarm which was trying to enter that same knot-hole in the wall. They settled finally on a small tree and were hived.

Another case of this kind where scouts were mistaken for a colony of bees was in an oak tree in a woods. Upon examining closely the bees became frightened and flew away. Later, when passing the tree again, a swarm was in possession of the very same hollow of that tree.

A Texas Apiary Among Mulberry Trees.

Half a dozen or more swarms have been hived, or rather they hived themselves right into stacks of empty hives and supers right in my own apiaries, besides some I know of in other apiaries. Many times large numbers of bees would be around such stack "investigating" every crack and crevice, perhaps scouts that were later to be followed by swarms.

One day, a year ago, my attention was called to bees "robbing" in a pile of entirely empty hives right in our city back yard. They acted in all respects the same as a bold band of some 100 or 150 robbers (the largest scouting band I had ever seen), only I remembered afterwards that they seemed very gleeful about finding the hives so empty and nice. It did not occur to me then what they meant, and in a few minutes they were off and all was quiet. This was right at our kitchen door. Just a week later I snapped the picture shown here, of the last part of the swarm entering the empty hives.

Whether all colonies send out such scouting parties, or whether certain colonies always do, would be hard to determine. We know that they do this very often, however. These parties vary in numbers. While I have seen most of them with only about two dozen bees (more or less) the one above mentioned was quite a large bunch of them, resembling very much a miniature swarm themselves, but their actions were very much unlike a swarm.

Mulberry Shade for Hives.

The readers will have noticed on page 124 of the April issue a photograph of some mulberry shade trees, both in their winter and summer condition, with and without foliage. Another picture is given herewith, which shows what a shady, cool, and inviting place it is in an apiary of this kind, especially when one knows what it is to have to work in the sweltering heat of a hot summer's sun.

Regarding this kind of shade, Mr. Smith comments as follows:

Speaking of shade for bee-hives, Mr. Scholl, I don't like the mulberry. The shade is too dense and thick when in full leaf, though putting out leaf late is a point very much in their favor. Our favorite shade tree for bee-hives is our old standby, the mesquite. It comes into leaf late in the spring, the shade is not very dense at any time, and it is one of the very first trees in the fall to shed its foliage. Then the leaves are so small and fine that they don't litter up the bee-yard like trees with large foliage.

Rescue, Tex. L. B. Smith.

Although I also prefer the mesquite for shade, and have most of my apiaries in groves of them, there are other places, yea, many, many of them, where no mesquite ever grew, and could not be depended upon for apiary shade. Besides, the mesquite would be a slow grower, and it would take too long before they would be large enough for shading hives. Not so with this wild mulberry. Its growth is rapid, and the trees soon attain good height. In many places these trees are relied on for fence-posts, and thus their planting would in time serve a double purpose.

These trees resemble very much the catalpas, which are very much planted for post timber, and which could be used in the same way for shading beehives. While the shade is quite dense at times, they leaf out late and defoliate early, and are bare during the winter so that the sun can strike in.

Contributed Articles

How Far Do Bees Go For Honey?

BY C. P. DADANT.

The article by G. M. Doolittle on the above-named subject in the June number of the American Bee Journal is most interesting to me, especially as the same subject was treated in the "Bulletin D Apiculture" (Swiss) at the same date, by Dr. Crepieux, of Rouen, France, an old apiarist and bee-writer, who was for a number of years editor of the "Revue Internationale." The articles evidence the uselessness of drawing any conclusions from isolated experiments.

Dr. Crepieux has an apiary of some 50 colonies of Italian bees in a country which is stocked only with common bees. He thus has very good opportunity of recognizing his own bees, and of ascertaining the distance which they usually cover in search of honey. With the use of a bicycle on the fine roads of France, he was able to investigate readily the local conditions. He says:

> "I was struck by the fact that my bees were much more fond of the northeast direction than of the southwest, although there are as many profitable fields in the one direction as in the other. Here is my explanation of this fact. The southwest winds are, in our region, those that bring rain. For that reason the bees go out less on the days when those winds are blowing. When the weather is fine, the winds from the east and the north bring the smell of the fields situated in that direction, and the bees go there. It may be also that they have intelligence enough to go in that direction because they can go against the wind when empty and come back with the wind when loaded; in any event, those two reasons and their practice tally and correspond with each other.
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> "In a westerly direction, I have never found any of my bees beyond 500 meters (a third of a mile). I must mention that we are limited on that side by the forest. This forest extends from south to north about 5 kilometers (over 3 miles). Its width is between 900 and 3,000 meters. My apiary is opposite the narrowest part. An important detail is that the width of the forest is guided by two very steep hillsides. The difference in level is about 60 meters (200 feet). I have never seen one of my yellow bees on the other side of this forest. Yet there are fields of esparcet, campanulas and buckwheat, over there, and owing to the direction of the slope, the crops there are a little later than here. I have seen my bees cease to bring honey when the crops around me were ended, when they might still have found flowers on the other plateau. I have ascertained at those times that the fields in question were still visited by bees, but that they were all of the common race, coming from an apiary with which I was acquainted.
>
> "I have also made a number of observations to ascertain the distances traveled by my bees in the other directions. In the southeast up to 800 meters, I always saw the yellow bees. At that spot the land has a slope of 8 or 10 meters and I have never noticed bees on the other slope or 200 meters farther. On the east and north the land is level, and as I have stated, under the influence of the northeast winds. It is in that direction that my bees travel. On fine days they go in all directions, but any of my visitors notice at once that half of the bees go to the northeast, the rest of them spreading about to all other points. Observations are easily made, as 48 of the 56 hives are grouped in a house apiary. The reader will probably wonder whether the best fields are to the northeast. There are of course important differences in the cultivation from one year to another, but it is to the southeast that the best fields are found. The others are scattered in all directions. Last year, in the northeast direction, nothing but cereals were to be seen. I explored the region and found a field of esparcet at 800 meters, it was covered with yellow bees. Another field, 150 meters farther, still showed some Italians. But still farther, 1400 meters from my apiary, a third field of esparcet did not show a single Italian. In this same direction preferred by the bees of my apiary there is a village, Bois-Leveque, where I often have professional duties. I have never gone there without examining the fields of blossoms. This village is 2200 meters from my apiary. I have never seen there any of my Italians.
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> "I have carried bees away from home, slightly marked with flour on the wings and the body. I have seen them come back when released at 600 .to 800 meters, but those which were released at 2,000 to 3,000 meters did not come home."

In concluding his article, Dr. Crepieux says that it is quite possible that the circumstances in which his bees find themselves may have influence on the distance of flight. My own experience would indicate that the shape of the land has much to do with the flight of bees. In "Langstroth Revised," the late Mr. Chas. Dadant reports that he knew bees to starve upon the hills in a year of drouth, while the Mississippi River low lands, less than 4 miles distant, were yielding a large crop. This experience has again been reproduced since his day. But we must remember that the country between the apiary in question and the low lands is very much broken and covered with patches of timber, orchards, fields of cereals, etc., all unprofitable ground after the spring days are over.

Again, an apiary located on the banks of the Mississippi, which is a mile wide at this point, never yielded as much crop by about half as other apiaries which were farther inland. We have always ascribed this to the fact that about half of the near-by pasture was cut off by the river. We rarely see the bees take the direction of the river. An apiary situated in another spot near the stream, located about 3 miles from the lowlands of the Mississippi, in Missouri, across the river, and which could not be reached except by a bee-line of nearly the entire distance over the water in a longitudinal cross section, absolutely ignored those low lands, during several short crops, though those bottoms were yielding a good harvest.

In moving bees to distances of less than a mile, we have seen many bees return to the original spot unless great precautions were taken, and even then some would return if the moving was done in the busy season. When moving them 3 miles, very few returned. At distances of five miles or more, we have never seen bees return. But another evidence of the influence of a stretch of water as a barrier, is found in the fact that at a distance of less than 3 miles across the Mississippi, the bees moved never did return.

Mr. Gaston Bonnier, professor at the Sorbonne, Paris, author of "Cours Complet d'Apiculture," and President of the International Congress of Bee-Keepers at Paris, in 1900, has lately reported some experiments made by him on how bees find their way home. He took bees to the fields and painted their eyes with blackened collodion, then turned them loose after having marked them so they could be recognized. These bees returned home. From this he concludes that bees have the sense of direction apart from sight, and compares their evident ability to return home to that of the carrier pigeon. Bonnier locates the "sense of direction" in the brain of both bees and pigeons.

That collodion experiment seems to me rather indefinite. I would expect that the secretion of their eyes similar to that in our eyes would soon remove the film thus artificially applied, and that they would nevertheless use their eyes to return home, for I cannot very well imagine either a blind bee or a blind pigeon returning home. I have, however, witnessed some very wonderful feats by carrier pigeons. When I was a child, I saw in our old city of France—Langres—the flight of a hundred carrier pigeons which had been brought on a wager, from Brussels, Belgium, exactly 200 miles as the crow flies. These were released from the top of the steeple of our cathedral. They circled around, rising higher and higher in the air, until almost out of sight, then took a direct flight towards their home, except half a dozen or so that seemed unable to follow, and returned to the steeple. I was always under the impression that our city had been selected as the place of release because it was on the highest cliff of a high plateau, and the parties who made the wager evidently wanted to give the best possible chances to those pigeons of recognizing their direction.

Again, on the transatlantic steamship, when going to Europe, in 1900, I witnessed the flight of half a dozen pigeons, which were sent ahead, a day before our arrival, to announce the ship. By paying a dollar, any of the passengers was enabled to forward a short message to his friends. The messages were all photographed in minute form, inserted in a small tube and tied under the wing of a pigeon. Did those pigeons reach home by a "sense of direction" located in the brain, or had they simply traveled enough before being used, to be able to recognize the direction to follow? Let some others, better posted than I am, give the reply. I, however, wish to say that there is a limit to the "sense of direction" either in pigeons or in bees, and that the length of it surely depends in great part on the configuration of the country.

It seems to me that a good place to test the possible greatest length of flight of bees after honey would be the irrigated valley of one of our Western States. In those districts where the blooming region of alfalfa is bordered by boundless dry wastes surrounding a narrow valley, bees ought to go farther than anywhere else, perhaps farther than 8 miles. But if I thought my bees could or would go even 6 miles in any direction regardless of obstacles, and harvest honey profitably, I would quit keeping out-apiaries and would not hesitate to place even a thousand colonies in one single spot.

Hamilton, Ill.

Foul-Brood Legislation

BY DR. G. BOHRER.

I see by the late Annual Report of the Illinois State Bee-Keepers' Association, that there is a difference of opinion as to the propriety of there being a foul brood law in that State. At any rate, the details as to the matter of specifying the length of time after foul brood has been found in an apiary within which the ailment must be treated, and the disease stamped out, was a subject of controversy. If my judgment is not very much at fault, this is a matter that should be left for the inspector to determine. If it be at a time when there is a honey-flow, the treatment can not be applied any too soon. If when there is no honey coming in, and there is a disposition to rob, it is plain to be seen that the sooner the matter is dealt with the better, as the disease will spread rapidly under such circumstances, if neglected.

Then, again, a colony may be quite populous and well supplied with honey in the fall, in which case I wintered a colony over, and will this evening (June 9) put it under treatment after the Baldridge method. It is proper to state that I treated this colony last September on the Baldridge plan, but the bee-escape I used (a Porter) was defective, and an occasional bee entered the hive after having come out of it. By which means, diseased honey was no doubt carried into the new hive, and the disease with it.

Others that I treated on the Baldridge plan are perfectly free from it, and are carrying in honey from alfalfa bloom rapidly. I also see that one person assumed the ground that treat the disease as he may, it will appear again, which position is an erroneous one. For scientific investigation has abundantly shown that foul brood is a germ disease, and it has been also proven in thousands of cases that when the germs are exterminated, and a colony of bees are put upon comb and honey free from foul brood germs, they are no longer annoyed by the ailment. That a failure may, and no doubt will, occasionally occur, as in the case I have called attention to in my own apiary, I have not the slightest doubt. But it does not by any means justify us in concluding that there is no such a thing as stamping out this ailment. For there is an overwhelming array of evidence, proving beyond all doubt or question, that foul brood is curable if treated according to well-tested methods.

As to the matter of destroying bees, hives, and honey, there are cases that require just such treatment, and nothing short of fire or burial beyond the reasonable possibility of resurrection, will serve an effective purpose. I refer to old, worthless hives, weak colonies, and diseased honey and poor comb.

The foregoing facts and suggestions I had intended to call attention to at the Chicago-Northwestern convention at its session referred to in the Illinois report, but for reasons that I will not take time nor space to relate, I omitted to do so at that convention.

Illinois surely needs a foul brood law, sufficiently rigid to enable the bee-keepers of the State to stamp out this pest, which is as much of a stumbling-block to bee-keepers as is glanders among farmers' horses, if left unrestrained. At some of the coming conventions, either State or National, I may have something more to say concerning foul-brood legislation.

Lyons, Kans.

Methods of Introducing Queens

BY G. M. DOOLITTLE.

As the best time in the whole year for supplanting superannuated queens is just before the close of the honey harvest, and as I have several letters about this subject, I thought that an article regarding the matter might not be amiss just at this time.

In introducing queens it should always be borne in mind that a queen taken from a nucleus or a colony in the apiary and introduced to another in the same apiary, does not require one-half the care that must be given a queen from a distance coming in the mails. The reason for this seems to be that the queen when taken from a nucleus in the same yard is in an immediate laying condition, and will not run around provoking the bees by her different actions from what their old mother had, causing them to look closely after her, and chase her if she sees fit to run, as will a queen after having had a long journey.

In introducing all ordinary queens coming from my own apiary, or carried from the home apiary to one 3 or 5 miles away, I generally adopt one of the two following plans:

The first is to go to a nucleus or the hive from which I wish to get the queen to supersede the one which I do not want, and when she is found I take the frame she is on, bees and all, together with another frame from the same hive, carrying them near the hive from which I am to take the superannuated queen. I next hunt out the poor queen, and after killing her, take out 2 frames from this hive and place the 2 frames brought from the nucleus, in their places, then closing the hive. Now shake the bees off the 2 frames in front of the hive and carry them to the nucleus, or carry bees and all, as you prefer. The object in taking 2 frames with them is so that while waiting outside of the hive she and most of the bees may cluster between them, thus becoming quiet, and, when placed in the hive, both are put in together, thus leaving the queen quiet among her own bees. In this way I do not lose one queen out of 50, and as the operation is so simple, and the queen so quickly installed, the advantages more than overbalance so small a loss.

The next plan is to go to my nucleus and get the young laying queen in a cage before looking for the queen to be superseded. I next look for her and kill her, when the hive is closed. I now blow in at the entrance enough smoke to alarm the whole colony, pounding with my fist on the top of the hive until I hear a loud roaring inside, which shows that the bees are filling themselves with honey. I then run in the queen to be introduced, at the entrance, smoking her in, while I still keep pounding on the hive. In doing this nothing but wood-smoke should be used, for, if tobacco-smoke were used, many of the bees would be suffocated. If done when there is danger of robbing, wait till just at night, or do it on some cloudy, cool day when the most of the bees are staying at home, for where robbing is started, or the smoked bees annoyed by robbers, the success is not so certain. The idea is to cause the bees to fill themselves with honey, at the same time smoking them so that the bees and queen smell and are under the same conditions, so that they do not realize that any change has been made. By this plan I seldom lose a queen, but it is not quite as simple as the first; however it is equally as successful as the other.

In introducing a queen which comes from a distance, I most often use what I term the caged-frame-of-brood plan, which is as follows:

Get out a frame of very thin material which will just go inside of the hive, and at the same time admit of one of the hive frames going inside of it. I usually make this so it will take 2 frames inside of the cage, for where we wish to introduce a queen in the latter part of the season, we shall need all the bees we can get to give the colony sufficient strength for winter This frame is to be left open at the top, so that the frames of brood can be set in, it being held in position at the top by light strips being nailed on each side, they projecting so as to hang on the rabbetting of the hive. The sides are now covered with wire-cloth when it is ready for use. When the queen arrives, go to any colony where frames of emerging brood can be obtained and get 2, shaking the bees all off of them, securing those from which the most bees will emerge during the next 24 to 48 hours.

Hang these frames of now beeless brood in the frame cage, and let the queen run in with the attendant bees which came with her, when the whole is to be hung in the middle of any populous colony in place of 2 frames, and left for 3 or 4 days. Of course the top is to be made secure in some way, so none of the bees from the hive can get into the cage, and none of the bees from the cage get out. A proper sized piece of enameled cloth answers for this purpose nicely.

If you have selected the right frames as to ripe or maturing brood, the cage will be pretty well filled with young bees in 3 days, while the queen will have commenced to fill the vacated cells with eggs.

The cage is now taken from the hive, which has furnished the warmth to cause the young bees to emerge, and carried to a hive where we wish a colony to stand, the cage set in one side of the hive, when we proceed to take out the 2 frames and set them on the opposite side, when a follower or division-board is drawn up to economize the warmth of the little colony. If there is not plenty of honey in the 2 combs from the cage, a frame of honey should be set in next to the side of the hive before the 2 frames are taken from the box, and thus this honey is beyond the 2 frames of bees, thus guarding against the robbing of the little colony, and especially so if the entrance to the hive is made at the side the cage is now hanging. It is best to allow this cage to hang here for a day or two, or till we open the hive again, so that all of the bees adhering to it after the frames of brood are removed, can crawl out at their leisure. In cool or cold weather, it is best to leave the 2 frames caged with the colony for 5 or 6 days, instead of 3, for, if taken out too soon, these young bees may not have sufficient vitality to cause the remaining unhatched brood to emerge from their cells. The little colony is now built up by adding frames of emerging brood, occasionally, as they can protect and care for them.

This plan is *absolutely* safe, and if all who have lost valuable queens will try it, we shall hear no more of so many losses in introducing. It requires some work, I know, and takes some time to build up a colony in this way, but after we have once lost a valuable queen we are ready to go through with some labor rather than lose another.

There are other plans which are employed to introduce queens, and general instructions attend all mailing cages, but where a person does not have the success he or she desires with them, the above will satisfy, if they succeed with others as they do with the writer.

Borodino, N. Y.

The 8-Frame Langstroth vs. Dadant Hive

BY J. E. HAND.

In these days when the majority of the people are blindly following the largest crowd regardless of whither it is leading them, and when men of original thought and independent action are none too plentiful, it is very refreshing to meet a man who has the courage to stand by his honest convictions even though he stand alone. Such a man is my worthy and honored opponent, Mr. C. P. Dadant.

While I have great respect for Mr. Dadant's opinion upon subjects pertaining to apiculture, yet different people view things from different standpoints, and therefore see them in a different light. In this way a dignified discussion if conducted in the right spirit can result only in good, since it must reveal some points that can not be seen from one particular point of view.

Viewing the Dadant hive from the standpoint of the comb-honey producer in the average location, it is weighed in the balance and found wanting. Therefore, it does not possess the necessary qualifications that should recommend a hive to a class of bee-keepers that represent by far the greater majority of the bee-keepers of this country.

Mr. Dadant is viewing his hive from the standpoint of the extracted-honey specialist, who represents a very small part of the bee-keepers of this country. Viewing the Dadant hive from the standpoint of swarm-control, its claims can not be substantiated in the production of comb honey. An extracted-honey hive must have something besides its size to recommend it. Therefore, the 8-frame Langstroth hive must ever remain what it is—a general utility hive—the hive that is best suited for the masses.

The Dadant hive is too heavy to be carried in and out of the cellar. Therefore bees in these hives must be wintered out-of-doors, which necessitates a great amount of frame manipulation in the fall in equalizing and uniting small colonies. Mr. Dadant admits that he finds some difficulty in increasing his bees enough to make up for winter losses, which is in itself rather significant.

My worthy opponent has fallen into a common error among large-hive advocates, in assuming that a large hive always contains a large colony of bees, while just the reverse is quite apt to be the case.

If a hive is made large enough to develop the fertility of the best queens, the average queen can not keep it filled with brood. Hence, it becomes a storehouse for honey. This condition of things is followed by a long train of evils, such as swarming, crowding the queen, loafing on the outside of the hive, refusing to enter the super, etc. And the bees will continue to crowd the queen until the breeding space is far more limited than it would be in an 8-frame hive. Thus the largest colony is quite as likely to be found in an 8-frame hive as in a Dadant hive.

Perfect control of bees is only to be found in a hive in which the size, shape, and methods of manipulation are correctly and scientifically balanced. Such a hive is the 8-frame Langstroth hive of today.

When bee-keepers learn that bees can be controlled only through their instincts they will be in a position to understand that perfect control of bees is out of the question with a hive in which the room in the brood-chamber exceeds the fertility of the queen. Here is where the 8-frame hive wins out in an easy pace.

The fact as stated by Mr. Dadant that his neighbor's bees in 8-frame hives became over-crowded with bees by May 15, and cast swarms every year, while Mr. Dadant's bees seemed to have plenty of room, and cast few swarms, is rather significant, and proves two things quite conclusively. One is, that the 8-frame hive is a splendid hive for building up rapidly in the spring, and the other is that the neighbor above mentioned has much to learn about bee-keeping methods. If the owner of those bees knew enough to give them a set of half-depth brood-combs at the right time, they would not have swarmed, and would have rolled up an amount of surplus that would have made the Dadant hive man stand up and take notice. And why not, for they are then larger than the Dadant hive, and in much better shape for răpid breeding up, since the additional room is in the warmest part of the hive—right over the brood-nest—which enables the bees to care for twice as much brood as in a Dadant hive, where they are compelled to extend the brood-nest sidewise into the coldest part of the hive, far removed from the heat center, and therefore could not be expected to build up strong enough to cast swarms before July. I believe Mr. Dadant's success with these hives is largely due to the fact that a large part of his surplus is gathered late in the season.

The 8-frame hive of today is as different from the 8-frame hive of a quarter of a century ago, as the Dadant hive is different from the long-ideal hive.

The modernizing influence of the sectional hive is slowly but surely revolutionizing the bee-keeping methods of this country, and it is these influences that have made the 8-frame Langstroth larger than the Dadant hive when a large hive is needed, and smaller than any other when a small hive is needed. And all the while it is the common utility 8-frame Langstroth hive of today—the hive for the masses of bee-keepers of America.

Birmingham, Ohio.

No. 7.—Colorado Bee-Keeping

BY R. C. AIKIN.

I closed article No. 6 with the details of swarm control as applied to getting the best results in surplus honey. Here we will go further into the management following, when we have gotten the bees where the apiarist can say he is in control. It is now to apply the energies of the bees where the most will be gotten out of them.

Most people suppose that no bees work so hard as a newly hived swarm, and possibly there is some ground for such belief; but I think I can dispel some of such belief when I have analyzed conditions, and have also shown some other conditions under which bees do most excellent work.

When the swarm is hived not much is done the first day or two but clean house and get comb started. What apiarist but has noticed that when he hived a swarm, say at noon, and went in the late afternoon to look at them, that very few bees are going and coming, and often he will tip up the hive or otherwise investigate, thinking his swarm is lost. He finds them clustered apparently idle. Nor is there much activity until sufficient comb is built to receive eggs, nectar and pollen; when this time comes there is work for every bee, and they get to business; there is lots of room and a division of labor that calls into play every energy. Contrast with this a colony with just about bees enough to cover 4 or 5 combs, and with brood enough to keep every nurse at work and every fielder in the fields searching and getting necessary stores. I said contrast, it is not a *contrast*, but more strictly a parallel. There is almost no possible perceptible difference in the energies put forth by weak but healthy normal colonies with plenty of room as compared with a natural swarm. I will give another parallel that any apiarist should observe.

Colonies worked for extracted honey where plenty of store-comb is present and in the most convenient location, and where sufficient ventilation and other conditions make for the comfort and best opportunity to employ every bee—there we almost invariably find a colony that gives a good record of itself. It is the common claim that extracted-honey colonies produce more honey than those run for comb. In this case the credit is not given to its being *natural* swarms that do the work, but usually that there is no comb to build. Go into a yard where there are natural swarms at work alongside of colonies of equal numbers or working strength, and you cannot tell which works the harder, or which gets the more stores or accomplishes the greater amount of work of all kinds in the hive. It is the colonies uncomfortable from over-heat, over-crowded with a mass of workers like an unwieldy mass of individuals, always in each other's way, no place in which to store, a queen that is not laying enough eggs to keep all the nurses at work, etc. A lot of bees that are thoroughly demoralized as by smearing with honey; if they get out of stores within and nothing without, anything and everything that tends to disgust, discourage and disconcert will retard in energy put forth.

It is but the most natural thing that a colony being annoyed by robbers, or those excited by the presence of strange or more than one queen, cease more or less for the time to attend to the regular business. Shake a colony, making a forced swarm, and there is unquestionably for the next few hours, and often for even the second day, but a small amount of work done, just as in a swarming colony when the excitement is on, almost all field-work ceases. But, just as the natural swarm soon rights itself and gets to business, so any forced swarm of equal bees in all respects and same opportunities will get right to business and make work count. And I will again repeat, and wish to emphasize, that it is the colonies normal in numbers and having the opportunities that get the most honey *per capita of bees*.

An average natural swarm in a big hive in an average honey-flow will not do good work in section honey. To get the finish desired, and as well the quantity, we find almost every writer advocating the doubling up by some plain method. This doubling will add to quantity and finish by the given colony that is the product of the doubling, but the same bees in *two* more nearly natural or normal ones will accomplish more in *gross production* of *all* products. That is why small hives are used more for comb-honey work, because a normal swarm must be squeezed up to super-work by a contracted brood-chamber.

WHAT ABOUT QUEEN-RIGHT VS. QUEENLESS COLONIES?

There is little difference between a natural swarm with a normal queen, and one with brood in all stages from which to rear one, so far as *working energies* go. The amount of brood present will use more or less, in proportion, of the energies and time of the workers; but if a small portion of brood be given to a swarm in lieu of a queen, work will proceed just about the same as with a queen just as soon as the colony becomes settled to conditions and accepts the situation and starts cells. But of course in all the manipulations and changes and in the varying conditions, we must keep in mind to have the end in view always before us. If you have bees, and want all possible from them, you must always have present with that colony, whether a swarm or one that has not swarmed, a queen or the *material by which to produce* one. If all is to be centered in honey, sacrifice other interests as wax, comb, brood-rearing, and even the future life of the colony, for they can not possibly do big work in all lines with the same resources, at the *same* time.

On one stand put a colony with everything favoring the greatest amount of honey in the best marketable shape, and specialize that colony to that end, and that only, at *least when the honey* is to be had, no matter what change may come later and what can be made of it even 2 weeks off. You can have colonies so arranged that you have robbed them of the fielders and of all workers except just enough to care nicely for the mother-queen and all the brood she can get when not crowded out of business by honey-logged combs, and a host of workers that nature would lead them through instinct to get dissatisfied and swarm—here you are specializing this colony to the getting of a normal colony for winter, and whose sole business is in getting that brood-chamber into proper shape, it is just in the most natural condition you could get, as bees are found in their one-room houses as in trees, etc.

And should the propagating colonies get too full for best results, divide. Or, if it is early enough in the season so that another honey-flow is yet to be harvested, so manipulate as to keep the honey storers out of the way, centering *their* efforts with the honey specialists and not crowding out the queen from her laying. Just as the farmer grows wheat in one field, corn in another, potatoes in another *ad libitum;* so should the bee-keeper divide his field of bees, for if he attempts to make every colony a "jack of all trades," or try to do all the things at once, he finds they are masters of none. The business of the bee-family in a state of nature is not to do such work as man sets them to, so just as soon as the conditions are unfavoraable to the making of a colony of bees in that particular home, when they have become unbalanced they divide and take up the same work in a new location. They have but one business specialty.

When it comes to the discussion of comb honey in comparison to extracted, note that with the latter there is by no means so far departure from the natural and normal conditions that influence the bees, for with the large hive and the fact that it is not nearly so cut up as if it were separate compartments, the bees being in such condition that they can continue to store freely without hampering the queen and nurses; in fact, the colony being in a more easy normal functioning condition, they just plod along, and almost anybody, whether he knows much of the whys of bee-nature, can handle them with fair success. But our little boxes, our demands for fancy finish, our trying to make the bees do things contrary to instinct promptings, run us into snags when comb in these little chunks is attempted, and requires skill and knowledge.

So, then, the first and foremost thing in the time preceding a honey-flow is to plan what you will strive for: whether it be increase of colonies, or to get the most in honey and wax, or to get the most of both, the special thing first is to favor getting the greatest number of workers. When the honey season is on, and also the season for increase, use the material at hand as you desire specializing, as above indicated. Those colonies run for honey must be put under special conditions where you have absolute control and can defeat nature through instinct, and you do this not by fighting instinct but by making conditions that stir up instinct to do the thing you want.

(To be continued.)

Extracted vs. Comb Honey

BY LEO E. GATELEY.

Nowhere in the history of modern apiculture can there be found a time during which the acquiring of distant out-yards and the producing of extracted honey ever became among all classes of the fraternity so universally popular as just at present.

Unfortunately, certain apiarian publications claiming undiscriminating devotion to the general subject of bee-culture, have, unconsciously no doubt, become so deeply engrossed in this one question that matter pertaining to other no less important interests have of late been woefully lacking. To the comb-honey contingent who are, if at all, but casually interested in the lengthy discussions relative to the production and handling of extracted, such a journal is both disappointing and tantalizing.

From the perusal of such journals the uninitiated are naturally led into the fallacious belief that the production of comb honey is always a matter of unremunerative secondary importance, which is chiefly responsible for so many rushing precipitously into this already fully occupied field.

Plainly, this prevailing sentiment against the production of section honey is going shortly to affect materially the supply, and, consequently, enhance the market value of that commodity. Comb honey is, unquestionably, destined to become, as never before, a delicacy commanding a corresponding fancy price. Bee-keepers equipped for the business, if situated in a locality at all suitable to the production of section honey, will make no monumental mistake in sticking to it.

Generally speaking, the production of extracted necessitates the maintenance of a series of expensive out-apiaries; while with section honey the majority of localities can be made to support in one home yard a sufficient number of colonies to suffice.

In former years, when the honey extractor was a comparatively new and untried apiarian appliance, enormous yields of green and inferior honey were sometimes secured by its agency; but by present methods in which only thoroughly ripened and sealed honey is considered fit for extracting, very little more is obtainable than when running for comb. Twenty-five percent more extracted than comb should be a generous allowance for estimating the relative proportional amounts possible to be produced of the two classes of honey, and never more than 50 percent.

In any market the disposal of section honey is less difficult. Its market value is considerably above that of extracted, often double, and, occasionally, liquid honey, as in our own case, can scarcely be disposed of at any figure.

Though no doubt it is possible to manage more easily a large number of colonies when run for extracted, an additional number are required and out-yards can be successfully managed for section honey.

The apiarist who is an expert in its production might find the matter worthy of the most careful consideration before abandoning it for extracted. On the other hand, there are, perhaps, localities in which one kind has, from a financial point of view, slight advantage over the other. In such a case the question really becomes one of taste or preference only.

The kind one aims to produce, whether section or extracted, should be settled upon in the beginning. The hive best adapted to producing one is generally more or less bunglesome for producing the other. For extracted a brood-chamber of no less than 10 or 12 Langstroth frame capacity is necessary if one is to avoid too close robbing of stores; while one of 8-frame capacity is admirably adapted to the production of section honey. Occasionally it may be found advisable to produce both in the same yard, but not ordinarily.

Recently considerable has appeared in these columns to the effect that comb honey, if not actually injurious must, on account of the indigestible beeswax it contains, be, as an article of diet, less desirable than that in the liquid form. Contrary to such a view, the very fact that such wax is indigestible is precisely the reason for the superiority of comb honey.

The frail and delicate comb into which commercial honey is stored is, when properly masticated and mixed with other food, reduced to small and innumerable particles. Though, of course, the wax is absolutely unassimilable, each of these tiny particles surrounds itself in passing through the digestive apparatus with a bit of the filth deposited by the decay of other foods which are digestible, thus removing poison from the body.

Comb honey might also, in cases of chronic constipation, sometimes be considered in one sense laxative. This is not at all because it is in any manner an irritant; but rather because it cleans and tones up the digestive machinery, thus putting it in a condition properly to perform its natural functions.

There is probably nothing which will give one so clean and delightful a sense of healthfulness as will a diet composed plentifully of comb honey. The nearest approach to it would be corn-bread in which the meal has not been closely bolted. In both instances beneficial results are derived from the identical source—unassimilable matter.

Ft. Smith, Ark.

Selling Honey Direct to the Consumer

BY G. C. GREINER.

After the honey-producer has succeeded by intelligent management and persistent hard labor in getting a crop, the next question, How to dispose of it in a profitable manner, has to be decided. If he fails in this, all his efforts to make bee-keeping pay, will prove a delusion.

The question, Does it pay to sell direct to the consumer? all depends upon circumstances; if he favors that part of the business, it certainly does, but, if not, it may be advisable to let others take it upon their shoulders to see to the retailing of our products.

Years ago, when I was living on a farm some 120 miles east of my present location, I had to send all my honey (section honey, which I produced then exclusively) to the city markets, depending entirely upon the discretion and generosity of the commission firms. Conditions were against me to manage my own retail trade. Being engaged every minute when I could leave the bees, I had not the time to peddle honey, and, if I had had, it would have been a rather lengthy job. My surroundings were comparatively sparsely settled, and being a rural district many of the farmers kept bees of their own, not only to supply their own wants, but in some cases to give and sell to their neighbors.

On this account no regular market price for honey could be maintained. Farmers in general were not informed on the country's honey-trade; they would offer what little they had to sell, below the price the dealer would ask, and, in fact, take anything they could get. Under such conditions, a peddler could not obtain living prices.

The nearest villages, and small ones at that, were from 6 to 8 miles distant, and even there only an occasional sale of a case of 24 sections, seldom more, could be made.

To sell a load of honey I would have been compelled to drive many miles, taking me so far from home that I could not have reached my own premises for my night's feed and lodging, adding another expense for board to the already unprofitable venture. Being thus situated I was compelled to pack my honey, send it to the city, and take whatever I could get for it.

Things are very different now. Making the production and sale of honey my main business, I have the time to be my own retailer. My present location is in or near the thickly settled portion of Niagara Falls industrial district. The city market is about 5 miles from my place of business, on a good, level road, easy to travel summer or winter. By starting out early in the morning, I can make this trip both ways, sell and deliver my honey, and take my dinner at home a little after noon.

For years I have made it a point to be on the market once a week. Through strictly honest dealing, offering for sale a genuine, pure article only, I have built up, I am proud to say, an unquestionable reputation, so that my rig alone, when it appears on the market, is taken as a guarantee for pure honey. I will say right here that I produce now extracted honey almost exclusively, for the very reason that a large portion of my customers prefer it. I make about four sales of this to one of comb honey, and as my honey is all put up in regular pint and quart Mason cans, which can be used for canning after the honey is taken out, my goods are desired and called for. It is an easy matter to make sales if you have to sell what others wish to buy.

Outside of my weekly market trips I have several routes in other directions, which I supply, to use a phrase, "between meals." Being obliged to go from house to house and farther to travel, it takes me a little longer to make the circuit, but I always get home for my night's lodging in good season.

In summing up the financial part of the question, I find these facts: When I shipped to the city markets, my fancy and No. 1 white clover and basswood honey sold generally for about 15 cents per pound, leaving me, after deduct-ing commission and express charges, 12 cents net; and buckwheat honey 9 to 10 cents net. Since I manage my own retail trade, I get for fancy and No. 1 white clover, 18 and 16 cents respectively per section, and 14 cents for buckwheat, all in 4 x 5 x 1¾ bee-way sections.

It is plain to be seen that the difference in these prices leaves quite a margin in favor of selling direct to the consumer, besides paying fair wages to the seller. But to obtain these prices, I put up my section honey in neat, attractive style; all propolis is scraped from every section, and every one is wrapped in white manila paper, with a piece of cardboard the size of the section on each side to protect the cappings. It takes a little time and material to prepare the honey in this way, but it makes it so much more convenient to handle, it keeps it so much cleaner, and makes it so much more attractive, that it more than pays for all the trouble. And after all, it is not an extra expense; it saves the cost of shipping cases, which we would have to furnish if our honey had to be shipped.

In regard to extracted honey, I can not draw a comparison. I have never shipped any to the city on commission. But I am well satisfied that it could be made a paying occupation, if a person were so situated that he could spend his time on the road, selling his own products.

La Salle, N. Y.

Rendering Combs into Wax

BY C. A. HATCH.

I accept Mr. Lathrop's challenge (page 141), and will tell what I know about rendering combs into wax, although this is not the first time I have made the attempt.

The first thing I would try to impress on the reader, or any one who has a lot of old combs to render, is that only about half of the wax can be gotten out of them unless a press is used, and I am conceited enough to think that the Hatch-Gemmill-Root press is the one to use.

Some kind of a vessel to melt the combs in is necessary, large enough so that 5 or 6 combs and their frames can be put in at one time. This may be a large iron kettle swung over an open fire outdoors, or it may be a large boiler on the stove indoors. Mine is an iron box made of heavy galvanized iron, 15 inches deep, and 15 inches square. I have two of them which I set on bricks and use 2 joints of 6-inch stovepipe to give draft. One boiler is used to put the combs in, and the other to remelt the cheeses for the second pressing.

When the water boils is the time to begin. Have the press handy to the boilers, and set up on some kind of a platform, so that a square honey-can with the top cut out (the 5-gallon kind) will easily set under the outlet. Have several of these cans ready, and also the forms in which the wax is to be moulded, all ready, then when the combs are melted into a soft mush, dip out into the cloth which you have spread over the rack and form of the press, about 2 gallons of water and wax "slumgum" together. Fold the cloth, put on the top rack and follower, and run down the screw—not too fast, but let the wax have time to run off.

When the can under the outlet gets full enough dip off into the moulds, stopping when the dipper shows dirt. When the can gets too much water in it to operate well, replace by one of the empty ones, let it stand a few minutes, dip off all the clear wax, and dump the rest back into the boiler.

A little water—hot, if you can get it—in the bottom of each mould, is quite a help. It gives the dirt a chance to settle, and helps in getting the cake of wax out of the dish.

The best way to purify wax is never to let it get impure. If the above directions are carefully followed, I will warrant a lot of wax that will need no purifying, and that will bring the top of the market price.

Mr. Lathrop is wrong when he says to re-heat the wax from the press and solar. Every time wax is heated more than just enough to get it out of the "slumgum" it is a damage to it.

Slow cooling is an advantage. Therefore, if working out-of-doors, all vessels containing cooling wax should be covered.

Iron rust will turn wax black, so if any of the vessels used are rusty they should be scoured bright first.

Rain-water I think is preferable to hard water, but well-water will do unless it contains iron.

I have never found any use for acid to purify wax that I made myself, and I think it injures its strength at any time.

Richland Center, Wis.

Size of Hive—Introducing Queens

BY EDWIN BEVINS.

In the February American Bee Journal, Mr. Aikin argues for the use of two 8-frame Langstroth hive-bodies, one above the other, in spring, in which to rear bees for the coming harvest. He was speaking for Colorado. Would he pursue that practise in Southern Iowa?

In the same issue I spoke disparagingly of the use of one 8-frame hive-body above another for the purpose of rearing bees in spring, and advising the use of hives wide enough to take a sufficient number of frames to accommodate the most prolific queens. Probably I used the word "most" without due consideration, and yet I would like to ask Mr. Poppleton what he thinks about it. He uses the "Long Ideal" hive, which is wide longitudinally, if such a paradoxical expression may be allowed.

At the time when so much stress was laid on the importance of having a strong force of bees ready for work at the opening of the harvest, and the necessity of keeping the whole force of bees and brood together during the harvest, I used many 8-frame hives in the way advised by Mr. Aikin. A few queens would have the 16 frames nearly full of brood when the white clover began to bloom. Some would have all of the brood in one story, and some would have from one to 4 frames of brood in excess of the 8. So I made up my mind that a 10-frame hive would be about right for the majority of queens.

By stimulation I have had queens fill the 2 stories practically full of brood, but such colonies almost always proved disappointing in results.

When the time for supering came, the effort was made to get the combs having most brood in one story on the old stand, with the old queen, and then the most of the bees of the other story were shaken in front of the hive on the old stand and the nearly beeless brood put in a new place. No matter how many supers prepared for section honey were piled on the hive on the old stand, the great mass of bees forced into this hive would become full of discontent, and swarming was almost sure to follow. So much for trying to keep the queen and all the bees and as much of the brood as the hive will hold of an excessively strong colony, together during the honey-flow when working for comb honey. If I had known enough to have done some of the things mentioned by Mr. Aikin, I think results would have been different. Let those who want to, practise stimulative feeding. All I want is to have plenty of feed in the hive at all times, and let the bees do the rest. A queen excessively stimulated is not worth much the year following. Not all are willing or prepared to requeen every season.

Mr. Aikin concedes that a 12-frame hive is wide enough. It is probable that but few queens need one as wide as this. If I should have one that would exceed this number, I would give her a deeper hive instead of a wider one. Ten Quinby frames have been proven to be sufficient for almost any kind of queen. Let me say here that a Dadant hive with flat bottom-board may be made into an 11-frame Langstroth hive in a very few minutes. Saw off enough of the bottom to leave the rest of the required depth, and you have it. The 11 frames will accommodate almost any queen you are likely to get. If you get the 10 frames of a 10-frame hive full of brood when clover blooms, you are doing well. These hives thus reduced in depth are good for both comb and extracted honey, but do not insure against swarming like the deeper hive.

Mr. Aikin's management of the 2 hives of bees and brood at the opening of the honey-flow may be, and probably is, a very effective safeguard against swarming, but he has, as a result, 2 colonies where he had one before. What would he do if increase is not desired? The practise so long urged of getting all of the bees, and all of the brood possible, into one brood-chamber for comb-honey production at the beginning of a honey-flow, is admirably calculated to bring about the very thing you least desire. Mr. Aikin's way I believe to be the better of the two. Mr. Doolittle accomplishes the same thing in a different way. The aim of both is to get the most or all of the bees into an uncrowded brood-chamber. Mr. Doolittle puts the old queen into this brood-chamber. If Mr. Aikin would do the same thing he could tier up his beeless brood as Mr. Doolittle does, and control increase.

I will here venture the opinion, and I think I can almost say with certainty, that the 8-frame Langstroth is responsible for more dead bees in spring than any other one thing. It was so persistently boomed for years, that everybody who wanted a hive bought one of 8 frames, thinking he had got the best. These hives fell into the hands of so many who had no knowledge of how to care for bees, that thousands of colonies died of starvation, that might have lived if they had been in hives of greater capacity. And yet they are a good hive in the hands of some.

Honey for Winter Stores.

When the season last year had developed so far as to convince me that it was going to be a poor one for honey, I ceased putting on supers for surplus, and went to putting on upper stories filled with drawn combs in order to secure all the honey possible for winter stores. This was done with colonies of good strength, but not with the strongest nor with the weakest. The strongest were worked for all the surplus possible, and the weakest to do what they could in one story. As soon as the weather got warm enough in the first half of April, I made examinations of these upper stories, expecting to find the brood-nests established in these upper stories. In most instances I found the brood there, but in a few others I found the set of upper combs heavy with honey, and the brood all in the lower story. The combs of the lower stories had but little honey in them, and this was remote from the brood. Did I put any of these combs of honey in the upper stories nearer to the brood? I didn't. I took them all away and gave each colony 3 quarts of liquid feed at one feeding.

My reasons for this procedure will be sufficiently indicated when I say that Mr. Doolittle's idea of an extra set of combs filled, or rather partly filled, with honey, to be placed on the brood-chamber, over an excluder, about the time of fruit-bloom, I believe to be of greater moment to the bee-keeping world than anything that has been thought of since Langstroth thought of the movable frame. These combs are put away for later and experimental uses.

Abbott Plan of Introducing Queens.

Of the dozen or more queens introduced last fall by the Abbott plan, not one was lost. I have just been examining the colonies having queens that had done good work for 2 seasons. One was in a hive containing 11 Langstroth frames. There was no brood and only about 100 bees. The combs were about half full of sealed honey. More combs, you see, for experimental uses. Let me say here that when getting combs of honey for experimental uses, from colonies that *have* queens and brood, do not overlook the sugar-barrel for winter food.

Superseding Queens, Etc.

The other colonies examined were in 10-frame hives, and I found the colonies weak in number of bees, and brood scant, as a general thing. This confirms me in the belief that the apiarist will do well to follow Mr. Doolittle's latest advice and supersede after the queen has done 2 season's work.

Mr. Doolittle asserts or argues (I do not know exactly which), that this superseding by the apiarist is not necessary when using small hives. By small hives I think he had in mind the 8-frame Langstroth hives, although I believe he at one time used a smaller kind. Even if the queen, as he says, would do as good work the third season as she had done in the two former ones when worked for comb honey, is it true when worked in the 8-frame hives for extracted honey? I have worked some colonies in 8-frame hives for extracted honey, giving unlimited room above, and at the end of the season found the brood-chamber light in stores, showing that the queen had had unlimited room for laying.

On the whole, I feel constrained to say in this connection that "One by one the roses fall," and that "So sleeps the pride of former days." It was not long ago that Mr. Doolittle was an advocate of the small hive, and the supersedure of queens by the bees. When later experiments make it plain that better results can be obtained by a change from both these things, he very properly advises a change to the better methods. We are all grateful for many of the things Mr. Doolittle has said and done. Glancing backward over the things I have read in books and papers devoted to apiculture, I am not a little surprised to note the many things that were taught and practised a few years ago that are held to be bad practise now. One thing I note that is distinctly retrogressive and indefensible, and that is the way some queen-breeders classify their queens.

Leon, Iowa.

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Preventing Swarming — Queen-Cells Not Hatching—Repairing Old Combs—Clipped Queen and Swarming.

I dare say you will be surprised to get a few queries concerning the "poetry of Nature" from such a remote quarter. However, seeing that I have devoted much study to the following details before finally deciding to appeal to you, I hope you will kindly do your best to assist me.

1. In the American Bee Journal for November last, "Pennsylvania" mentions the Dudley tube system (page 343), as means for preventing swarming, etc. Now, can you inform me why it is that the bees transferred with the combs to the lower hive do not commence queen-cells? In the Alexander and Somerford systems for *increase*, the same *method*, practically, is employed as is followed by the Dudley system as a means for *preventing increase*, except that the position of the extra hive is reversed. It is commonly known that bees when provided with the means for supplying a queen lose no time in doing so, and with the facilities provided them by the Dudley-tube system, it seems peculiar that they should not do so. I note in your reply to "Pennsylvania" you state *inter alia*, "you would find it practically impossible to shift combs of sealed brood without having any unsealed, nor would it be necessary."

2. Why is it that queen-cells sometimes fail to hatch even when carefully protected by prepared cages? In any case, I invariably find that the larva in the cell is shrivelled up at the hatching end of the cell: this in spite of a plentiful supply of "royal jelly," favorable climatic conditions, and during the honey-flow. I have sometimes attributed the foregoing to the fact that cells were made from a queen's first round of laying; but I have recently noted the same results with a second-season queen's brood.

3. Why do bees in repairing old comb, *apparently* (I say apparently because I have no actual proof, beyond discoloration) use old comb for the work? Recently, I placed some old damaged combs in some of my hives, together with some new ones slightly damaged. In the former case the patching was made by the bees to match the surrounding sides—the wax used was dark brown. I always supposed that bees could secrete only the new wax with which we are all familiar.

4. Do you think it possible for bees to carry away a clipped queen when acting under the swarming impulse? I recently lost a swarm having a clipped queen. At first I was inclined to place faith in a story told by A. I. Root in the "A B C of Bee Culture," where he relates that a swarm returned to the parent hive after being away a short time, presumably owing to the fact that the queen could not take wing with the bees on account of being clipped; but my faith was shattered when I saw the swarm above mentioned depart from the veld, and the only inference to my mind is that the bees—possibly the drones—carried her majesty away, *a la* Elizabethan style, so to speak—on their shoulders!

South Africa.

Answers.—1. Whenever bees are made to feel that they are not in pretty close communication with a queen, you may count pretty safely on their starting queen-cells if they have the right material from which to start them. But these cells are not allowed to go on to maturity. They are destroyed, either directly by the bee-keeper or the bees. Increase can be made or prevented, just as the cells are encouraged or not. And that makes all the difference.

2. Swiss bee-keepers, who are away up in matters pertaining to queen-rearing, tell us that mere physical heat is not enough to bring young queens safely to maturity, the bees must be allowed to be in close contact with the cells, exercising some mysterious influence by their close contact with the occupants of the cells. According to that it is a mistake to cage cells as soon as they are sealed. In my own practise I leave the cells uncaged in a *strong* colony, not caging them till there is danger of their hatching.

But there is one thing that looks as if another cause was at the bottom of the trouble. You say you find the larva "shrivelled up at the hatching end of the cell." That looks as if the combs had been shaken, thus throwing the larva out of its bed of jelly.

3. Your supposition is correct; bees secrete

only the new white wax. But as a matter of convenience or economy they are quite apt to take bits of dark wax from old comb to mix in with the new wax, whenever such old comb is close at hand. When I used wide frames for sections, I practised putting brood-combs in the super, between the frames of sections, in order to start the bees more quickly in the sections. It had the desired effect, but if the brood were left in the super until the bees began to seal the sections, they were sure to mix the old, black wax in the cappings.

4. No, I don't for a minute believe that bees ever carry a queen. Of course I don't know, but I would need proof to convince me. If I had a colony with a clipped queen, and a swarm from it should leave for good and all, I should think that a young queen had been reared, or that a queen with whole wings (perhaps with a little afterswarm) had joined the swarm and gone off with it.

Hauling Bees for Wintering.

1. As I understand it, you run one or more out-yards, hauling your bees in every fall to be wintered at home, and out again in the spring. When do you haul your bees home—at the close of the honey season, or when it is time to cellar them? That is, do they have a flight before going into winter quarters, and in the spring are they given a flight and then hauled out right away, or do you wait until settled warm weather?

2. Using plain frames, how do you manage to keep them from swinging and killing the bees when hauling over rough roads?

3. Do you produce extracted honey at the out-yards? WISCONSIN.

ANSWERS.—1. This year, for the first time in many years I am running only one apiary, the home apiary. But I can answer your question all the same. I haul my bees home in the fall whenever it is convenient after the close of the season, making sure that it is early enough for the bees to have a good flight, before going into cellar. In the spring it would be practically impossible to haul them before having a flight, for they generally fly within a few minutes after being taken out of cellar. It would be bad, even if possible, to haul them without having had a flight. They are hauled as soon as convenient, weather and other things considered, perhaps in a day or two, perhaps not for 2 or 3 weeks.

2. In the sense you seem to mean, I don't use plain frames. Nothing can be plainer than the Miller frame, except that there are common nails, as I have often explained, used as side-spacers, and staples as end-spacers. Nothing is needed at any time to prepare the bees for hauling; except to close the entrance with wirecloth.

3. Comb honey entirely. But it's much easier to run an out-apiary for extracted honey.

Feeding Bees in Winter.

1. How shall I feed bees in winter? A neighbor has 67 colonies, all short of stores. They winter in a wooden building, and are put 3 or 4 on top of one another. Six colonies have already starved, and the rest are starving. Of course, your answer will come too late, but I should like to know what ought to have been done. We have tried to use candy, but it was a failure, as we have no recipe for it. Then we took slices of loaf sugar, dipped them in water and put on the top of the frames. The bees took some of the sugar while it was wet, but more than half of it dried and the bees can not take it. Then some one advised my neighbor to cook sugar syrup, pour it in empty combs and put one comb in each hive near the division-board. But this is a great derangement for the bees, as he is obliged to carry home each hive for this operation, as the temperature in the bee-house is too low to allow opening the brood-nest there. And it is extremely slow work. What would have been the right way to feed the bees? Although it is already April 13, there seems no possibility of getting them out earlier than in 2 weeks, as there is much snow and the temperature is very low.

2. My own bees seem to have enough stores, but there is another misfortune. They are ill with dysentery, and I fear they will die of it sooner than they can have a flight. The bee-house is very small. Seventy-three colonies are piled up in it, and, of course, the air is not pure. I open the door at night, but every day a new colony begins to be noisy. The bees crawl out on the front of the hive and soil it. And the smell of such a hive fouls the air of the whole bee-house. Why are my bees ill with dysentery, while my neighbor's bees, which are starving, do not suffer from it? Is it because his bee-house is much larger and the air purer? Or is it because I left in the winter too small entrances in the hives, and ventilation was bad? I will be very thankful if you explain where the fault was. The bees here had their last flight the end of September. That makes already 6½ months in the hive, which is, of course, a long time for the bees to be housed up. RUSSIA.

ANSWERS.—My good friend, I have never yet refused to answer a question in this department, and I'm not going to begin with one of the craft in far-off Russia. While your writing has the ear-marks of a foreigner, I only wish that all the bee-keepers in this country would write as clearly as you.

1. As a rule, feeding in winter is very undesirable, and every effort should be made to have enough food in the hives to last throughout the time of confinement and beyond it. Still, it will sometimes happen that feeding in winter is necessary. Although I do not mean to have any need for it, still, if at any time I should want to feed in winter, it is a very simple thing. Simply push in at the entrance, under the bottom-bars, a frame of sealed honey, or even a section of honey. I always have the combs of sealed honey on hand, not for the sake of feeding in winter, but to use in spring. This plan, however, was probably not available with your neighbor, first, because he probably had not a 2-inch space under his bottom-bars; second, because he had no combs of sealed honey; and, third, because his bee-house was colder than my cellar, and the bees would not have come down to help themselves. But being now warned, you provide in advance to have sealed combs. Then one of them can be put in the hive next the bees, or one can be laid flat on top of the frames.

In the absence of combs of honey, resort may be had to candy. There will be plenty of time between now and next winter to learn how to make candy, but any candy you would buy at the candy-shops could be used rather than to have the bees starve. But it's an easy thing to boil sugar in water to make candy, only you must be very sure not to burn it, for burnt candy is death to bees in winter. A cake of candy may be laid on top of the frames.

All of this is equivalent to saying that you better not think of needing to feed in winter, and in any case it is a good plan to save up combs of sealed honey.

2. Either or both of the conditions you mention may have made the difference between your bees and those of your neighbors. It is possible you might help matters in such a case by heating the room; if in no other way, by putting in it heated stones.

Swarming—T-Supers and Scraping Sections—Sloping Cells.

1. When making examinations only every 10 days, don't some of the colonies swarm before you get around, or before the 10 days are up? It works that way with me when cells were found and destroyed and also when none were found 10 days before. Ten days seems rather long to leave mine.

2. I use the T-super as described by you, and like it very well, but I have trouble to keep the sections down to their place; one corner is likely to stick up above the other sections. A few sections in nearly every super act this way. I tried some section-holder supers and had the same trouble. I use 2 and 3 springs to the super, and usually let the sections dry a day or two after wetting the corners and folding, so that the corners are not so tight, but this does not entirely remedy the trouble. Can you suggest a remedy? I have tried wedged strips both 3-32 and ⅛-inch thick.

3. I go over each super after it is on the hive long enough for the bees to glue the sections a little, and press down all sections that stick up, but after doing this the sections seem so uneven that I make slow work at scraping sections while in the super as described by you and Miss Wilson. The sides and ends of the super also seem to interfere by being in the way of the scraper. Can you make the plan any plainer?

4. Do you clean the little wedge-shaped strips used at the top of the supers, or throw them away each fall? If you clean them, what is the best way to do it?

5. I have noticed that cells not used immediately for eggs are built more sloping or pitching upward than those used by the queen at once; then as the brood-nest enlarges, these sloping cells are used for brood, or become a part of the brood-nest. I use full sheets of foundation largely, so of course my cells are usually all worker size. Are these sloped-up cells considered as good for brood as these built more horizontally?

6. If not, please give us your way of getting all cells built horizontally, both when hiving swarms (if you ever hive a natural swarm) and when increasing by nucleus plan, and any other plan you use to get combs drawn out or built.

7. What is the best method of managing swarms when using full sheets of foundation, and running for comb honey, where the flow is rather short, as it is here, more especially our fall or buckwheat flow, beginning about August 1? The clover flow, beginning about June 1, is somewhat longer, lasting a month or more.

8. I believe you use and advise full sheets of foundation in brood-frames at all times. If not, when and how do you think it advisable to use starters?

9. Do you ever hive a natural swarm, or do you let every one that issues return, and treat them afterward as you describe?

10. I have Root's "A B C" book, 1905 edition, but have not your "Forty Years Among the Bees," and can not get and read it now because I have too much other reading to do, but I hope to get and read it some time in the future, for I am following your plans, etc., to some extent. If I had your book perhaps I would not send in such large volleys of questions. PENNSYLVANIA.

ANSWERS.—1. If you have got it into your head that I attempt to keep down swarming by destroying queen-cells every 10 days, better get the notion out of your head. Not sure that you have, but it sounds just a little that way. If I to-day find queen-cells not very far advanced in a colony where 10 days ago there were none well advanced, I destroy them and take my chances of the colony for another 10 days. Generally it will not swarm in that time. Sometimes it will, but even if it should swarm within 24 hours, the queen is clipped and no swarm can go off with her, and in that 10 days no young queen can be sufficiently matured to go off with the swarm. Even if I should get around once every 5 days, I could not be dead certain that no swarm would issue. So I wouldn't gain enough by the shorter time to pay for the increased amount of work.

2. It must be that your sections are pretty bad. I seldom have any trouble, and I use only one spring in a super, that being at the middle of the follower. If I understand correctly, you crowd in between the sections at the top little strips 3-32 or 1-8 inch thick, and perhaps ¼-inch wide, and long enough to reach across the width of the 6 sections. When these are crowded in so as to take up all empty space, no respectable section ought to be able to rise above its fellows. If, however, the section is sufficiently crooked, it may force itself up in spite of being thus wedged down, and I don't know of any remedy but to get better sections.

3. We don't scrape the sections in the super; can't do it with the sides and ends projecting above the sections. We have a frame about the size of the super, only ¾ or 1 inch shallower. The sections are thrown out of the super, this frame is put in place of the super, the sections wedged in, and then you can scrape to your heart's content.

4. You say "wedge-shaped." Although used as wedges, they're not wedge-shaped, but simply plain sticks 11¼ x ¼ x 3-32. It's an easy job to clean them. Throw them into a kettle of hot lye, or a solution of concentrated lye, then take them out and put in a vessel of clean water, then take them out to dry.

5. Yes.

6. I leave it entirely to the bees. If you examine closely, I think you will not find cells much out of horizontal so long as they are only deep enough for brood, say less than ½-inch deep. It's the deeper cells that get the upward slant, and of course this sloping part is cut down if the cells are used for brood.

7. I don't know of any change I would make for those special conditions.

8. I don't believe it is advisable for me to use less than full sheets at all times. If you want to try anything else with a natural swarm, give it only half the full quota of frames when hiving, or at least reduce to that number within a day or so after hiving, having only starters in the frames. After these are filled, give the rest of the frames filled with worker-comb. The idea is that when a swarm is first hived it will build only worker-comb for a few days, but afterward more or less drone-comb.

9. Possibly I hive as many as 2 swarms

each year. Generally they are allowed to return to their hives.

10. Although it may sound like advertising, I'm going to say that a man who can ask questions so intelligently as you, is losing by not reading "Forty Years among the Bees," even if he has to crowd out some other reading. Even if I tell in these columns from time to time the very same things that are in the book, you get them there in connected fashion, and thus get a different impression from that to be got in this chopped-up fashion, and that little difference of impression might sometimes make enough difference in results to pay for several books. I'm not so sure, though, that you'd have any fewer questions to ask after reading the book. I suspect it would pretty much take the poetry out of bee-keeping if one should ever get so one would have no questions to ask. For one, I'm sure I don't expect to be without fresh questions—don't know that I want to be without them.

The Giant Bee of India.

Do you think that the giant East Indian honey-bee will ever be imported to this country? Indiana.

Answer.—No; and I don't believe it would be of any value if it were brought here. Your other questions as to persons represented in pictures of U. S. Bulletin No. 1, I cannot answer.

Concrete for Hive Bottoms.

How about concrete for hive-bottoms? I am setting some of my hives on a block I make for them right on the cool ground. Can they be used for winter? Illinois.

Answer.—They will probably work all right for either summer or winter. Of course it would seem as if concrete would give the bees "cold feet" in winter; but then they don't need to put their feet on the concrete.

Bees Dying on Frames of Honey—Candied Honey for Winter Stores.

1. Why do colonies of bees die wintered outdoors well packed and clustered on frames of honey, or with solid frames next to them?

2. What causes honey to candy in a hive inhabited by the bees?

3. Is such honey as good for winter stores as that which is not candied? New York.

Answer.—1. There may be various causes: queenlessness and old age, too little ventilation, diarrhea, etc. If you mean that the solid frames of honey cause their death, I doubt the correctness of that belief.

2. Although special conditions may cause candying, it is often due to the character of the honey. Some honey candies very readily, others scarcely at all.

3. No.

Life of Queen—Swarming—Bee-Sting Remedy.

1. How long is the life of the average queen?

2. When bees swarm, which leave the hive, the young or old, and are they forced out by the remaining swarm?

3. Do bees find a home before they swarm?

4. Can comb and honey be gathered from the same flower?

5. What is the best remedy for healing bee-stings? Kansas.

Answer.—1. Perhaps about 2 years, varying from a few weeks to 4 or 5 years.

2. Bees of all ages are in the swarm, and they go without any forcing.

3. Often, and perhaps generally.

4. Nectar and pollen are obtained from flowers; the wax of comb is secreted by the bees, just a little after the way in which the cow secretes milk.

5. Perhaps there is nothing better than common mud.

Swarming with Virgin Queen—Not Supersedure.

Did you ever have a prime swarm issue with a virgin queen while the old queen remained in the hive? I have kept bees 30 years, and never saw such freaks as this year. All my queens are clipped, but a number have swarmed and settled in trees while I have been down on my knees looking for the clipped queen, which I could not find until I examined the hive, and there I found her. Meantime the swarm stayed in the trees until I went after them. When I hived them there was a virgin. These were all last year's queens, so it was not supersedure. I think it is on account of the weather, about one clear day in 10 so far. Other colonies that made preparations to swarm waited till cells were hatching. It is no use to depend on clipped queens this year.

Last year I had 12,000 pounds of honey. This year I will not get a pound unless the weather changes soon. New Jersey.

Answer.—I'm not sure whether I have had such an experience, but there is nothing impossible about it. If a queen is clipped the swarm can not go with her, and you may pretty safely count that in about 8 days from the time the swarm issued the first time a virgin will issue with a swarm. The only thing unusual in your case was that the old queen was still there, for I think she is generally put out of the way before the virgin issues with the swarm. I don't see but what you can depend on clipped queens this year as much as any year, for clipping prevents the old queens going with the swarm this year, and that's all it does any year. But that's worth a big lot.

Drones and Mating of Queens.

Are you not a bit "off the track" in the first part of your answer No. 5 to "New York," on page 127, of the April number of the American Bee Journal? Queens mate only once and drones die on their honey-moon; how then can either of them mate with their offspring?

Or did you mean that a virgin queen that has flown several times and by reason of scarcity of drones in the neighborhood still remains virgin, starts laying drone-eggs, and waits till one of the drones reaches maturity—no, no, it's not good enough, Doctor. British West Indies.

Answer.—A *bit* off the track! That's letting me down more than a bit too easy. Why, it's a mile off the track. A queen's father is dead before she is born, and she mates before her first son is born, so there's no possible chance for "the mating of parent and child." My chagrin at making so bad a break is only exceeded by my gratitude to Mr. John Ward for calling attention to it. Perhaps it's a good thing, however, to have my self-conceit taken down a little. I was just beginning to think that I was learning to answer questions pretty well. Now I'll have to "go away back and sit down."

Managing Swarming.

Will the plan that I have in my mind work all right in regard to bees? If when the first, or prime, swarm comes out and I should hive it on the old stand, immediately put old colony on a new stand, and if it should send out an afterswarm, and I should again move the old swarm to a new location and fasten them into the hive until the brood all hatched, and then unite them with the afterswarm—would it be all right to do so, or would they fight? Would it be all right to fasten them in with wire-screen over the entrance? If so, how long before the brood would be hatched? Maine.

Answer.—I don't believe you would like the plan at all. If you fasten the bees in the hive for so long a time you will be likely to find a lot of dead bees.

Fastening Foundation—Getting Bees to Work in Sections.

1. How do you fasten super foundation in sections? I followed the directions with the fastener, spread honey along on the section, and put about 3-16 of an inch of foundation under the lever and mashed it flat, slid the lever off the foundation, and there was but little honey squeezed out the sides, but still plenty under the foundation for glue.

2. Is it that whole sheets were too heavy to be fastened only at the top? It would hang for a few days and then drop.

3. What caused the foundation in the super to warp? The sheets were 3 1-3 x 11 inches, hung only from the top. Please do not understand that the 11-inch sheets were the only ones to fall, for those in the sections fell, too, but not so badly.

4. Is there any way to get backward bees to work in the super besides baiting them, and then maybe wait until they are forced to? That was always my luck. Missouri.

Answer.—1. Honey, if used at all in fastening foundation, is not to be used as glue to make the foundation stick, but as a lubricant *to keep it from sticking*. So there should be no honey between the foundation and the surface to which you wish to fasten the foundation, but on the face of the wood that presses upon the foundation, so that this face will readily slide off the foundation.

2. The sheets were not too heavy. The wonder is that they would hang for a few days when the honey was there to keep them from holding on.

3. Not sure I know just what you mean by sheets warping. Perhaps it was that they let go in part and fell over, which would be caused by the honey.

4. Yes, get them so strong that they'll be glad to rush into the sections without any bait; only they will enter the supers sooner with baits. If you mean a way to make a weak colony start work in a section that will not begin on a bait; there is no such way. You may force them to go into the super by putting some brood in it, but that will not force them to store there if there is plenty of room to store in the brood-chamber.

Bees Bothered by Ants and Cockroaches.

What can we do for cockroaches? They are destroying our bees. Are red ants an enemy? How can you get rid of them? Some of our hives are full of ants. Ohio.

Answer.—Cockroaches are disagreeable things to have about the bees, but I didn't know that they would destroy bees. I wonder if there is not some mistake about that. Ants are also troublesome, but do no real harm unless it be down South where they sometimes destroy whole colonies. For either roaches or ants the best thing is to furnish no harbor for them about a hive—no place where they can get that bees can not get. Years ago, when I used quilts or sheets, ants and roaches found it very convenient to have their nests over these quilts, where they were "comfy" and warm, and no bee could get at them. Since quilts were discarded and flat covers used they do not trouble, except occasionally a nest in a hollow cover. You can furnish them poison. Put it between two little boards, one of them ⅛ inch above the other, which will admit the pests but not the bees.

Buying Queens for Increase.

For a bee-keeper having 30 colonies, and intending to increase to 40 by fall, what queen or queens would "you" buy from the following table of prices, to get a good breeder, not looks but *honey* being the object sought? Table of prices:

Untested, one for $1.00, 3 for $2.50, 12 for $9.00; tested, one for $2.00, 3 for $5.00, 12 for $18.00; tested, last year's rearing, $2.50; select breeding, $5.00; extra-select breeding, $10.00. Missouri.

Answer.—I'm not sure that I know what is best, but if I were this minute choosing for myself I would take the dozen of untested. That's on the supposition that the breeder was well surrounded with pure drones.

Granulated Combs—Swarming Indications.

1. What can I do with combs that have honey partly granulated? Some frames are all granulated. It seems to be sour in parts of the frame. These are frames that the bees have died on the past winter, and were all cleaned of bees that were loose on the combs. The hive was cleaned out to hive swarms on, and stored in the attic since April 15, 1909. A number of the frames have bees in the cells that crawled in to get the honey and died here, which do not come out readily, so I think they help to make the combs smell bad. Is it safe to hive swarms on these combs? Will they accept them in this condition? and will not these granulated combs be a waste, or will the bees make it (the granulated honey) into liquid honey to be used again? I have 18 hives in this condition.

2. Do you glue your one-pound sections, or do any other bee-keepers that you know of? Will they stand shipment as well without gluing? Are there any gluing machines on the market that one can get, that will pay? If so, where?

3. Do we always have drones flying in May and June before the bees swarm, or will they swarm without the drones flying? Drones flying are, as a rule, a sure sign of swarming soon. Is this right?

4. How long after drones begin to fly in the apiary will the bees swarm?

New York.

Answer.—1. Better not give those combs, as they are, to swarms. At least don't give a whole hiveful at a time. The bees might desert. It might work all right to give 2 or 3, possibly 4, at one side of the hive, filling up with clean combs or foundation. Spray with water the combs that have granules in, repeating the spraying until the granules are all gone. Better give them to other colonies to clean up first, and then you can give a whole hiveful to a swarm. You can set a hiveful over a full colony to be cleaned up.

2. I think no one glues them. I know of no machine for it. They stand shipment all right without gluing.

3. You will probably always find drones flying in May and June; but drones flying is by no means a sure sign of swarming.

4. No rule about it. You may see a few drones 2 months before swarming, and some colonies may not swarm at all.

Extracting Comb with Patch of Brood.

In case there should be a patch of sealed brood on a frame that required extracting, would it be injured in the extractor by being thrown to the outer end of the cells? Would the bees therefrom be as strong?

California.

Answer.—I don't know. My guess would be that a bee nearly ready to emerge would not be injured, but that the occupant of a cell just sealed might be injured, if not killed.

Bottom-Boards in Winter—Cutting Queen-Cells to Control Swarming—Hybrids vs. Italians.

1. I have hives with reversible bottom-boards. Which is the best for wintering, the big or the small one? Why?

2. When controlling swarming by cutting queen-cells, how many shall I leave? If there were 4 queen-cells would it do to cut all but one?

3. I have nice hybrid bees. Will they gather as much honey as Italians?

Iowa.

Answers.—1. The big. Gives better chance for ventilation, with less danger of choking the entrance with dead bees. Although the reversible bottom-board is my own invention, I no longer use it, but use a bottom-board 2 inches deep the year around. During the gathering season I put in a bottom-rack to prevent building down.

2. No matter how many there are, cut all but one. The bees can swarm as well with 2 as with 10.

3. Good hybrids are as good gatherers as Italians, sometimes better. The trouble is that if you breed from them you're not as sure of good stock as if you breed from pure stock.

Early Queens—Long-Tongue Bees—Albino Bees—Best Race of Bees.

1. I had a colony of bees that cast a swarm April 15. They had reared a lot of young queens. Why was it that they acted that way so early? The only bloom was fruit-bloom.

2. Are queens reared so early worthy of heading the colony through the season? and what ought to be done with such queens? or what ought I to do to get a good queen in the colony?

3. I see the long-tongued red clover queens advertised. Have they a longer tongue-reach than the common Italians? What race of bees has the greatest tongue-reach, if any difference?

4. How about Albinos? Are their queens prolific, and are they gentle and easily handled?

5. What race of yellow-banded bees are the gentlest and best for the beginner?

Kentucky.

Answers.—1. It is not such a very unusual thing for a colony to swarm during fruit-bloom, the only reason for it being that the colony is unusually strong. It might also be that a very strong colony in some way lost its queen, in which case a number of young queens would be reared, and if there was a heavy flow on from fruit-bloom the colony would be pretty certain to swarm.

2. Generally queens reared very early are poor. If, however, there was such a good flow from fruit-bloom or other early harvest as to encourage swarming, it is possible a good queen might be reared. If she is poor, you will find the combs not well and evenly filled with brood and eggs, and you may also find queen-cells started with the idea of supersedure. In that case you will do well to give a better queen, either by purchasing one or rearing one as soon as a good honey-flow begins.

3. There have been red-clover queens which undoubtedly did better than the average on red clover, no doubt because of the longer tongues of the workers, but the trait does not seem to be very permanent. I am not sure just now, but I think Caucasians have the longest tongues.

4. The general rule is that albinos of the human race, or any other, are weaker than the average. I can not say about their gentleness.

5. Probably nothing can be recommended for the beginner better than 3-banded Italians.

Many Drones—Old or Young Bees Swarming?

1. I am a beginner in bee-keeping, and have started with one colony of Italians. Why are the worker-bees killing so many drones? They began to cluster outside of the hive for 5 days, and since then they have killed so many drones. I should judge from 200 to 300. Is it natural to have so many drones, and is there a way to prevent them? I am looking for the bees to swarm, as they have been clustering out so thick.

2. Which of the two is it that leave the hive when they swarm, the old or young bees?

3. How long after a young swarm is hived can you put supers on?

4. What is the age of a worker-bee?

Illinois.

Answers.—1. Bees kill off drones if there comes a scarcity of pasturage. Also, if by any means they have a young queen, they are likely to kill off the drones as soon as the young queen begins to lay. It is better not to have so many drones. You can prevent them by filling the frames with worker foundation on which to have the combs built, and by cutting out all drone-comb and putting in its place patches of worker-comb. Bees hanging out is not always a reliable sign of swarming. The slaughter of the drones is a sure sign that they will not swarm.

2. All sorts.

3. As soon as a brood-nest is started and the queen laying, say in 2 or 3 days. But if a queen-excluder is between the hive and the super, the super may be put on right away.

4. A worker lives about 6 weeks in the busy season. Those born late in the season live perhaps as many months.

Pollen in Super—Value of Prime Swarms—Foundation Fasteners—Cyprian Queens.

1. Why is there pollen in the super? I am using the 10-frame Langstroth below hive, and shallow extracting frames above for surplus honey.

2. How much do you think first swarms are worth if I furnish the hive?

3. What do you think of the Root foundation-fastener? Is it much good?

4. Who sells Cyprian queens?

Indiana.

Answers.—1. If the queen goes up into the super, that will help to get pollen there. The shallowness of the frames in your brood-chamber also helps.

2. The price varies very much in different places, from perhaps $2.00 to $5.00.

3. I have had no experience with it.

4. I don't know. If any one is selling them you will probably see an advertisement to that effect.

Trouble with a Queen.

This spring I purchased 2 colonies of Italian bees from an apiary 2 miles distant from this place, and the owner told me there were 2 good clipped queens with them. But on the 24th of last month, I found the clipped queen of one of the colonies under the hive. I then caught her and put her in the hive, and in about a minute they threw her out dead. I did not examine the hives at that time, and about 8 days later found a young queen under the same hive, and on putting her back into the hive she was pulled out every time I put her in. The colony is working well in the supers, and do not seem to mind the loss of the queen any more than they would a drone. Neither colony has shown any signs of swarming yet, although the white clover is in bloom. What is the trouble?

Pennsylvania.

Answer.—Either the colony swarmed, or else the bees superseded their queen. If the colony swarmed, escaping your notice, the bees refused to keep a queen that would not go with them, and about 8 days later the young queens began to hatch out. One of these young queens took possession, killing or driving out the others, and you found one of those driven out. It may be, however, that the queen was about played out, although doing good work up to that time, and all right so far as human eyes could see. But the bees could not see that she would not last, and had prepared two or more young queens, one of which you found driven out, while the favored one remains in the hive.

Eggs and Unsealed Brood Out of Hive.

How long can combs of eggs and unsealed brood remain off a hive without being damaged?

Cuba.

Answer.—I don't know. That's a good subject for you to experiment upon. I know that brood nearly ready to seal will begin to crawl out of the cell within a few hours—perhaps 2 or 3—after being taken from the hive. In Switzerland they make a practise of sending eggs by mail, so it is likely eggs will keep at least a day or more. A fresh-laid egg would perhaps keep better than one 3 days old.

Peppermint as a Honey-Plant.

Is peppermint a good honey-plant? It is sometimes cut twice in distilling it for the essence. Will it bloom the second time the same year? Would it pay to move bees close up to it where it grows? There will be from 500 to 1,000 acres of it about 5 miles from my apiary.

Michigan.

Answer.—I don't know. As, however, peppermint is one of the Labiatæ, it would be nothing strange if it were a good honey-plant. Possibly some one in a peppermint region can tell us about it. Peppermint is classed among honey-plants in Root's "A B C of Bee Culture," but that doesn't say whether it is good enough so that it would be profitable to move 5 miles for it. It would be an easy matter to move a single colony and find find out what it would do compared with colonies at home.

Self-Requeening—Excluder Zinc—Extracting Frames—Keeping Empty Combs.

1. Will the bees rear a new queen when the old one gets too old to be any good?

2. Will not the queen-excluding zinc be very hard for the bees to crawl through? It seems to me that they would not be able to work nearly as fast when they have to squeeze through that.

3. Would it not be practical to use the same size frames in the supers for extracted honey, and let the queen go above if she won't stay below, and then when the honey harvest is over sort the combs out and take what is good and put the brood in the brood-nest together with the uncapped honey if there is some of it? Would not the bees cap that over before cold weather and get it ready for winter? Would it not be all right to give them the uncapped honey if there is lots of it?

4. Would not an air-tight box be all right for keeping empty combs, and also for keeping honey so that moths and other vermin can not get at it? That is, if kept upstairs in a dry place, they would not be likely to mold.

Kansas.

Answers.—1. In my experience I can count quite safely on the bees superseding their queen before she plays out. Some, however, say that if they leave the matter of superseding entirely to the bees, they have quite too many queenless colonies in the spring.

2. Naturally it seems that a queen-excluder ought to hinder the bees greatly in their work. But in actual practice I don't believe you will find that it makes any perceptible difference.

3. Yes, all of that will work if you don't wait too late to reduce the brood-chamber to a single story. Better do it before the bees stop all gathering.

4. Yes, only you must be sure there is nothing in the way of eggs or larvæ of the bee-moth present before shutting in the combs. If you take a comb directly from the bees and shut it up air-tight, very likely you may find within 2 weeks worms from eggs that had been present. If you fumigate these with carbon bisulphide or sulphur, repeating it perhaps 2 weeks later, you may then count your combs safe in close confinement. There would be no mold in the place you mention.

Strengthening a Weak Colony.

I have a colony that is very weak, but they have a queen. How can I introduce some Italian bees without killing the queen? Robber-bees are very bad. INDIANA.

ANSWER.—Something depends upon *how* weak the bees are. If there are enough to cover one or more frames of brood, the *safest* way to strengthen them is to exchange their brood for another frame or other frames that are more mature, say with sealed brood nearly ready to emerge. The quickest way is to give bees. Queenless bees are safer than others, and the younger the better. If you shut up bees in a dark cellar for a day or so, they may be given. If you give few enough bees at a time there will be little trouble, only old bees given directly from another colony will not stay. You can give to the extent of a fourth of the number of bees on hand, and then add more the next day or days. You may shake bees on the ground in front of the hive, and let them run in. Do this late enough in the day so that robbers will not trouble, but early enough so the old bees will fly back to their home.

Putting Bees on Starters.

I find dead larvæ in two of my colonies that have comb-honey supers on the hives. I intend to put the bees on starters. They have not worked any yet in the supers. Will this be all right? ILLINOIS.

ANSWER.—It will be a good thing if there is foul brood or black brood present, but it will not be necessary if it is only a case of starved brood. Wm. McEvoy says there are many cases of starved brood that are taken for foul brood, the brood being sometimes starved with honey in the hive, but not unsealed or close to the brood-nest.

Keeping Queens till Sold or Used.

In rearing queens according to the method given on page 198 of the June American Bee Journal, under the heading, "Getting Many Queen-Cells," when these queens hatch out, say 5 or 10 of them, what do you do with them till you get ready to sell or give them to other colonies? TENNESSEE.

ANSWER.—You can not wait till "5 or 10 of them" hatch out, nor till one hatches out. For as soon as the first one hatches out, she will bite into the cradles of her younger sisters and murder them. So you must put the cells in a nursery before it is time for the young queens to hatch, or else put each cell in a separate nucleus. In a nursery, which is merely a set of cages to contain the cells or virgin queens, a young queen may be kept a number of days, at least a week or two, and in a nucleus indefinitely.

Some Drone Questions.

1. Will a colony of bees keep more drones than they need? Some say that the workers will kill them off if there are too many.

2. About how many drones should there be in a healthy colony?

3. Will drones stay with a colony of bees without a queen?

4. I had a very strong colony this spring, so I put an empty hive-body under them when they commenced work well. About a week ago I set the top hive on a new stand. Yesterday I was looking at them. The one that I set on a new stand has been carrying out some brood. The most of it seems to be drone-brood. They seem to have no drones in the hive. Will the other colony have some drones? Which colony do you think the queen is in? IOWA.

ANSWERS.—1. Yes, indeed. So long as there is a good harvest a colony may keep 10 times as many as they need.

2. Some think it best to try to keep them down altogether, except in one or more of the best colonies. I think G. M. Doolittle allows to each colony what drones they can rear in a square inch of drone-comb.

3. Yes, better than with a queen.

4. The one that is carrying out its drone-brood.

Reports and Experiences

Clovers Yielding Nectar.

We have had three days of good honey-flow, but now it is raining. Red and alsike clover are in full bloom, and seem to be yielding well. H. G. QUIRIN.

Bellevue, Ohio, June 22.

White Clover Light.

Bees have done very little so far. White clover is very light, and only beginning to produce nectar. There has been almost no swarming as yet. L. C. TAYLOR.

Gibsonburg, Ohio, June 26.

Clover and Basswood Prospects.

The clover prospects at this date are as follows: White clover, not much; alsike clover, one-fourth crop.

Basswood trees are all full of buds.

N. E. FRANCE.

Platteville, Wis., June 24.

Cold and Backward Spring.

Bees have not done much so far this season on account of the cold, backward spring, and, recently, too much rain; but the weather is settled somewhat now, and the bees are getting very busy. W. L. POWELL.

Arkansas City, Kans., June 9.

Season Late for Bees.

The season is late for bees, but they are ready for clover now, which is just beginning to show in protected places. We have had lots of rain, and the honey prospect is good. There have been no swarms yet.

T. F. BINGHAM.

Farwell, Mich., June 17.

Beginning to Swarm.

Bees are doing well now and beginning to swarm, but I never saw so bad a spring as this. Clover prospects are good so far as I can see—ditto basswood. All we lack is plenty of warm sunshine. C. A. HATCH.

Richland Center, Wis.

No Super-Work Done.

There is very little clover yet and no work done in the supers—not 2 ounces of honey in the brood-chamber in some hives. Bees get along by hand-to-mouth existence so far. Prospects are not very good yet. Swarming has begun, but the bees in most of the hives in my yard are running the drones out as if it were September. JOHN EGENES.

Story City, Iowa, June 19.

Backward Conditions.

In looking through the American Bee Journal for June, I notice from reports that about the same conditions existed in other parts of the country that we had here—cold and backward, and bees much inclined to rob. We had good weather and a profuse fruit-bloom during apple-bloom, and from that time (about May 10) bees have been building up nicely. There has been an unusually large amount of dandelion, and the tulip trees were full of bloom and seemed to yield a large amount of nectar. Bees are now storing a very dark and altogether undesirable grade of honey. However, the basswoods are loaded full of buds and those of us who are fortunate enough to have our colonies in the right condition when the buds open, may secure a light crop of basswood honey. There is no clover to speak of in this section this season, although the conditions are all right for the young clover, and perhaps next year will be another good year for bee-keepers.

Mr. Pryal's letter in the June issue, was especially interesting. I imagine he got considerably interested himself when those swarms came out so fast that hot day. Well, I am glad he came out first best.

Bees are swarming here now, but so far the swarms have been one at a time.

Cromwell, Ind., June 17. E. H. UPSON.

Bees on Verge of Starvation.

The cold still continues here, and though some of the best colonies are getting enough nectar to keep them in fine condition, many of the mediocre colonies are on the verge of starvation, and are not building up well at all. Not a few colonies are killing off their drones. Fruit-bloom was the most abundant for years, but the bees were unable to get honey from it. ALLEN LATHAM.

Norwichtown, Conn., May 31.

Bees and Farming.

The bees are in very poor condition working on the fruit-bloom. I find it profitable to run an apiary in connection with an 120-acre farm. While the bees are often left to look after themselves more than they ought to be, yet they will return more profit for the time and money expended on them than anything else I have. J. W. SADLER.

Ottosen, Iowa, May 27.

White Clover Fine.

We are having lots of rain, and the white clover is coming on fine. If we have the right conditions at blooming time, we shall have some honey. A. D. SHEPARD.

River Falls, Wis., June 7.

Slim Prospect for Honey.

Our prospect for a honey crop is very slim at present writing. White clover is almost all killed. What is alive is not yielding honey. Sweet clover is about 10 days off, and is liable to be mown down as soon as in bloom. The weather is too uncertain for queen-rearing. I have been trying it on a small scale, but lost 18 out of 21 by getting chilled; but, like all other bee-keepers, will keep on trying, hoping for better luck next time.

San Jose, Ill., June 19. FRED TYLER.

An Experience with Bees.

I have had considerable experience with bees when at home with my father several years ago, and some experience just a few years ago in Kansas.

Last July—the last day—I got some bees of a party for helping him change a colony from a badly worn and moth-eaten hive. I got about one-third of the colony, left him the queen, and brought my bees home in a nice, new, clean hive with 4 frames of comb, honey and considerable brood and eggs. In 3 weeks I had a fine queen. This was then late in August. I kept them through the winter in nice shape and now they are getting very strong and doing fine.

On May 5, I secured 3 colonies from another party. And of all the pranks among bees, some of them have been cutting them sure enough.

My strongest colony I thought I would simply divide, so I sent for a queen, expecting her the second day after I divided, but instead of that she was a week getting here. I introduced her in the cage for 2 days and 3 nights, then released her. The bees would not have her, but did not kill her, and meantime, robbers broke in and were in greater numbers than the bees that belonged in the hive. Having now but little brood in the hive, I took from my old colony that I had wintered a good full frame of brood and honey, made a cage about 5 inches square and caged the queen on the brood and honey, closed the entrance of the hive with a piece of screen and kept the robbers and all in the hive for 2½ days, throw-

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ing some water into the hive through the entrance. On releasing them from their captivity the robbers had made up their minds to stay, and stay they did and went to work just the same as if they had always been in that hive. Now the queen has been in that cage 5 days, and today on going to the hive to release her, I found within 3 inches of the cage that she was in, and on the same frame of brood, 2 fine queen-cells, one sealed over and the other almost so.

I at once made a solid partition and placed it in the center of the hive, leaving the one frame of brood containing the queen-cells on one side of the partition and the rest of the brood on the other. I then released the queen and put her on the side of the hive away from the cells. Now I have 2 nuclei in this one hive, one with a queen and one with 2 queen-cells. I also divided the entrance and put a partition on the alighting-board, fitting up against the hive, and am awaiting results.

May 14, I took the queen and one frame of comb honey and some brood from another strong colony, and placed her in one-half of a hive that I had partitioned off for nuclei, giving them other frames of foundation. They are doing fine. On the 17th, on examination of the queenless colony, I found 5 queen-cells, and on the 19th I found 7. Expecting them to begin to hatch about the 29th or 30th, on the 24th I cut out 2 that were jammed up together and grafted them on a frame of brood taken from another hive, and put them in the empty half of the hive where I had the nucleus with the queen. This was about 4 p. m., May 24. Next day I found that the bees had deserted the brood and had gone back home. I repeated the operation, getting a fresh comb of brood, heavily covered with bees, grafted the same cells in it, placed them back where the deserters had been and closed the entrance with wire screen for 2 nights and one day. This morning, I gave them their liberty early, and at 11 o'clock there was not a corporal guard of bees on that comb. I then got an empty hive, placed it back of the queenless hive, and prepared to make 2 or 3 nuclei in it of queen-cells and place it on top of the queenless hive, but on picking up the frame that I knew had had several queen-cells on it, I at once discovered a fine young queen, the 13th day since making the colony queenless, and also found that she had been into mischief, for she had destroyed three of the cells, leaving only one in that hive. So with the other cell that I had grafted on another frame, and this one that she had left, I made 2 nuclei, and placed them over an excluder on the hive with a new queen.

Now what will the results be? and what of my plan of procedure under the circumstances with which I had to deal? I now have 4 colonies with queens, 2 nuclei with queens, and 3 nuclei with queen-cells.

I would like to hear from older experienced bee-men on the conditions that I have had to deal with, and see if I have gone at it right or wrong. E. G. GOSSETT.

Cherokee, Okla., May 27.

Magnificent Honey-Flow.

The bees are just now in the height of a magnificent honey-flow. But it is raining too much. They are losing too much time. We are having the greatest crop of white clover in years. I have kept bees right here for over 25 years, and such a crop as this we have never had in that time before. The swarming fever is at the top notch just now. Talk about controlling it! They have gotten ahead of me this time. Dr. Miller's plan of setting the old colony beside the swarm a week, and then moving it some distance away, isn't in it this year. Perhaps I am not "onto the job" just right. Anyway, I had 2 like that today. I think I'll dig out some cells tomorrow.

Barnard, Mo., June 28. S. A. MATSON.

"The Biggle Bee-Book."

The Wilmer Atkinson Co., of Philadelphia, publishers of the Farm Journal, have just launched a new bee-book with the above title. They are the publishers of a series of Biggle books on various farm topics, and this last deals with bees and bee-keeping. These books are very much condensed, ostensibly to suit the busy man, whose time is limited, and they make no pretensions to being complete treatises on the subjects of which they treat. Many have found the series useful, and they serve admirably for the use of beginners. They can be very conveniently carried in the pocket, if one cares to do so, so that, if anything is forgotten the matter may be looked up at once.

It is an extremely difficult matter to "boil down" our bee-knowledge, that it may be put in so small a compass, but the author seems to have succeeded very well. The average beginner is looking for a bee-book which is "as plain as A B C," which of course is impossible, but if he (or she) is looking for something short and simple as an introduction to bee-literature, we can commend this little book.

The author is said to be Jacob Biggle, which is a *nom-de-plume*. We imagine *"Jacob"* lives hard by Long Island Sound in a peaceful commuter's village where lions, and bears, and bulls are not unknown.

Despite its small size the book is very well illustrated by a liberal profusion of pictures. This will greatly enhance its value in the eyes of the mere beginner who, like "the man from Missouri," requires to be shown by ocular demonstration. With him *seeing* is *believing*.

The binding of these Biggle books is good, so that, despite the low price, they will stand fair usuage for some years. The great temptation with many publishers is to be skimpy on the binding with the result that the book is soon destroyed.

There are 19 chapters and an index. The 1st chapter gives the reasons for keeping bees, the next, what race of bees to keep, and the 3d, how to make a start with bees. The 4th deals with hives and implements, the 5th with spring management, and the 6th with swarms and swarming, while the 7th deals with comb and extracted honey. The 8th chapter covers queen-rearing and introducing, and the subjects of out-apiaries and moving bees come in for study in the 9th. The spicy subject of bee-stings and remedies gets its innings in the 10th, while how to winter bees takes up the 11th chapter. Here the author gives a *kink* worth the price of the book, that is, to wrap carefully each hive with about 10 thicknesses of old newspapers and over that put a water-tight telescope cap. That's good advice for farmer bee-keepers.

Chapter 12 discusses bee-diseases in a pleasant way, and the one following that the enemies of bees, while honey as a food and as a medicine is disposed of in the 14th and 15th. Beeswax has the 16th chapter all to itself and honey-plants the 17th. The important subject of marketing the products of the apiary is considered in the 18th, while a bee-keeper's calendar forms the last. This is followed by a copious index, so that the book as a whole is quite complete. The price is 50 cents postpaid; but we club it with the American Bee Journal one year—both for $1.40. The book contains 136 pages.

Best All-Around Tool for the Farmer.

One of the best tools for the farmer, one that every farmer can find good use for and that many farmers will find indispensable after trying, is Clark's Double-Action Cutaway Harrow and Cultivator. This wonderful invention combines adaptability to various work with efficiency that is second to none. As it is set up and shipped, it is a Harrow. As such, it combines lightness with good work. It is drawn by a team of light horses, fits a track 4½ feet wide and can be used with or without its extension head. It will do the work of several disc machines that would cost the farmer several times as much, and do it more thoroughly because it has four gangs instead of only two. The draft is suitable for two light horses, and is direct from the center at all times. This machine is always sent with Extension Head and jointed pole, and with two large discs for listing, when so ordered. Full particulars can be had by writing to the Cutaway Harrow Co., 913 Main St., Higganum, Conn., mentioning the American Bee Journal when writing.

Langstroth on the Honey-Bee

Revised by Dadant—Latest Edition

This is one of the standard books on bee-culture, and ought to be in the library of every bee-keeper. It is bound substantially in cloth and contains nearly 600 pages, being revised by that large, practical bee-keeper, so well-known to all the readers of the American Bee Journal—Mr. C. P. Dadant. Each subject is clearly and thoroughly explained, so that by following the instructions of this book one cannot fail to be wonderfully helped on the way to success with bees.

The book we mail for $1.20, or club it with the American Bee Journal for one year—both for $1.70 or, we will mail it as a premium for sending us **FIVE NEW** subscribers to the Bee Journal for one year, with $3.75.

This is a splendid chance to get a grand bee-book for a very little money or work. Address,

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Reared under supersedure conditions, untested at $1.00 each until after July 10th, when the price will be 75c. Queens ready after May 25th. Send for price list. 5A4t

O.F.Fuller,R.F.D.,Blackstone,Mass.

Reference, Arthur C.Miller,Providence,R.I.

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Sample copies of current numbers free.

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The American Institute of Phrenology

incorporated 1866 by Special Act of the New York Legislature, will open its next session the first Wednesday in September. Subjects embraced: Phrenology; Physiognomy; Ethnology; Psychology; Physiology; Anatomy; Hygiene; Heredity; Anthropology.

For terms and particulars apply to M. H. Piercy, Secretary, care of **FOWLER & WELLS CO., 18 East 22d St., New York, N. Y.**

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Tennessee-Bred Queens

37 Years Experience, breed 3-band Italians only.

	November 1st to July 1st			July 1st to Nov. 1st		
	1	6	12	1	6	12
Untested	$1.00	$5 00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select Untested	1.25	6.50	12.00	1.00	5.00	9.00
Tested	1.75	9 00	17.00	1.50	8.00	15.00
Select Tested	2.50	13.50	25.00	2.00	10.00	18.00

Breeders $4.00. Add twenty percent for queens to be exported.

Nuclei, without queens: 1-frame, $2.50; 2-frame, $3.50; 3-frame, $4.50. 1 Full Colony, 8-frame, $9.00.

Select the queen wanted and add to the above prices.

NOTE

I have transferred to my son, Benj. G. Davis, my straight 5-band and Golden department, and in order to receive the promptest attention, all correspondence for these should be sent direct to him. He practically grew up in my queen yards, rears queens by my methods, has had charge of this department for years, and understands his business.

Prices same as above except Breeders, which are $4.00 to $10.00. No disease.

JOHN M. DAVIS, Spring Hill, Tennessee, U. S. A.

"If Goods are Wanted Quick Send to Pouder."

ESTABLISHED 1889

Bee-Supplies. Root's Goods in Indiana

Standard Hives with latest improvements, Danzenbaker Hives, Honey-Boxes, Comb Foundation and everything that is used in the bee-yard. Large illustrated catalog mailed free. Finest White Clover Extracted Honey for sale in any quantity desired.

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Will again sell the genuine strain of Miller Queens at the following prices: Untested, 60 cents each after June 15th. You will oblige me by sending for my price-list on Untested, Tested Queens, Nuclei and full colonies. Address, 6A2t

S. E. MILLER
Rhineland, - Missouri

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ITALIAN QUEENS

None but select Queens are sent out, and if not well pleased with Queen after you have had her two years, I will refund money and 50 cents for your trouble.

Queens, $1.00 each; 6, $5.00; 12, $9.00. Breeding Queens, $5.00.

W. M. Parrish, Lawrence, Kan.

Covert, Kan., Sept. 12, 1907.

W. M. Parrish, Lawrence, Kan.

Dear Sir:—The queen I received of you in 1906 yielded this year twice as much surplus as any other one colony I have.

Clarence A. Hall.

Please mention Am. Bee Journal when writing.

QUEENS of Moore's Strain of Italians

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the Bee-Keepers' Review, Flint, Mich., says: "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queeens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

—PRICES—

Untested queens, $1.00 each; six, $5.00; doz., $9.00. Select untested, $1.25 each; six, $6.00; doz., $11. Select tested, $2.00. Extra select tested, $3.00. Breeders, $10.00.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address, 7Atf

J. P. MOORE, Queen-Breeder,
Rt. 1, Morgan, Ky.

Carniolans

One Tested Silver Gray Carniolan Queen, no yellow bands, $1—per doz., $10; Untested, 75c—per doz., $8. 6A4t

W. M. KERNAN, Rt. 2. Dushore, Pa.

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Ask us for prices on the goods you will need for this season. Discount for early orders. Send us your subscription for Gleanings—one year and a Bee-Veil for $1.15, postpaid. Send for catalog.

M. H. HUNT & SON. Opp. Lake Shore Depot. Lansing, Mich.

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DON'T BUY QUEENS UNTIL YOU SEE MY

FREE OFFER

NOT CHEAP QUEENS, BUT QUEENS CHEAP.

Reared from the best selected red-clover mothers. My queens are all reared by the bees, as they far better understand the job than I. I use no artificial plan. All queens large and well developed, such as will, with proper management, fill an ordinary hive full of eggs and brood in ten days.

Directions for building up weak colonies with my queens, 10c.

Prices of Extra Selected Three-Band Bees and Queens.

Untested queens	1,	$ 75	6,	$ 4.20
Tested "	1,	1.00	6,	5.70
Breeder	1,	5.00	3,	12.00
1-frame nucleus with untested q'n.	1,	1.75	6,	10.20
2-frame nucleus with untested q'n.	1,	2.25	6,	13.20
1-frame nucleus with tested queen.	1,	2.00	6,	11.70
2-frame nucleus with tested queen.	1,	2.50	6,	14.70
Full colonies, untested queen				4.75
Full colonies, tested queen				5.00

Prices of Extra Selected Five-Band or Golden Italian Queens.

Untested queens	1,	$ 1.00	6,	$ 5.70
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Breeder	1,	10.00	3,	24.00

If queens are wanted in large quantity, write for price list. 3Atf

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CHOICE QUEENS

Golden—Red Clover—Italians—and Gray Carniolans

	1	6	12
Untested Queens	0.75	4.00	7.50
Tested	1.00	5.50	10.00

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It Tells You

all about farm cultivation, orcharding, live stock and poultry breeding. How to market crops successfully, informs you how to ship, pack, crate, bill and get returns. "RURAL FARMER" columns are rich in things you should know. Three Months for 10 cents.

Published weekly—50 cents per year; 3 years for $1.00, or $1.00 per year for club of 3 persons.

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44 S. 3rd Street, - Philadelphia, Pa.

Full Colonies and Nuclei

We offer for delivery any time after April 15, full colonies of Italian Bees, in 8-frame hives, at $7.00 per colony, including queen; or in lots of 5 or more colonies, at $6.50 each. Nuclei—3-frame, with queen, at $3.50 each; or in lots of 5 or more, $3.25 each. Nucleus orders to be filled about May 10.

The above prices are f. o b. express, shipping point 100 miles west of Chicago. Orders filled in rotation. Satisfaction guaranteed. Address,

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THE FRUIT-GROWER

ST. JOSEPH. MISSOURI

is the leading magazine devoted to horticulture. It contains monthly as high as eighty pages of up-to-date illustrated matter, which places its readers in position to earn maximum profits on fruit. In some sections orchard land owned by Fruit-Grower readers is sold as high as $1,000.00 per acre, and in many sections it is being sold at one thousand to two thousand dollars per acre. In no other branch of farming can land values be made so high. The lands mentioned above are worth the money, as they pay interest on the amount.

FREE LAND INFORMATION

Among the many departments in the interest of our readers is "The Fruit-Grower Land and Colony Department." It is our aim to give complete, authentic information in regard to lands in any section of the country where our readers may contemplate purchasing. This advice will be worth thousands of dollars to anyone who figures on buying land for investment or for a home. The editor of The Fruit-Grower has personally inspected many fruit-growing sections, and we are in position through our subscribers to secure reliable data regarding any section on the continent.

For several years we have been trying to secure a fine tract of land to be colonized by members of The Fruit-Grower Family. Numerous tracts have been offered us, but after sending experts to examine each in regard to soil, climatic conditions, etc., they did not come up to our standard of excellence. We will not use anything but the very best possible location for this colony, and we hope to secure the proper one in a short time. If you are interested in purchasing land either for a home or for investment, fill out blanks below and send in with our special trial coupon.

Special Trial Coupon

THE FRUIT-GROWER, Box C22, St. Joseph, Mo.

Send your paper to me three months on trial, FREE. After reading three numbers, I will either become a subscriber or notify you to stop the paper.

I am interested in land in states listed below, marked X.

..Washington. ...Wyoming ...Missouri
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Send 10c for four sample issues of our big fruit magazine and we will send you any one of the following highly popular songs: "My Rancho Girl," "Some Time in After Years," "A Boy and a Girl," "Molly Dear," "Falling Leaf," free. Don't wait, send today to the Fruit Belt Publishing Co., 187 E. Fulton St., Grand Rapids, Mich.

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Golden and Red Clover Stock

The late E. L. Pratt (Swarthmore) used 50 of my Goldens in 1908, and wanted several hundred this season. My clover stock originated from the leather-colored Italian bee of Northern Italy, and has never been surpassed in the production of honey and its many other good qualities.

Price of Queens: 75 cents each; 3 for $2.00; 6 for $3.75; $7.00 per doz. Tested $1.25 each. Nucleus with young queen on 2 frames, $2.50, June 1st. All queens guaranteed to reach buyer in good condition.

Circular free. 5Atf

GEO. W. BARNES,

Box 340 Norwalk, Ohio

TEXAS FAMOUS QUEENS

The Blue-Ribbon Winners

Will be ready early in April. Let me book your order now for April, May and June delivery.

—PRICES—

Untested, each,	75 cts.;	per doz.,			$ 8.
Tested,	" $1.25	"	"	"	12.

Italians, Banats, and Carniolans—all blue-ribbon winners, and free from disease. Write for Circular. 3Atf

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GEO. S. GRAFFAM & BRO.

ARE LOCATED AT

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Black Diamond Brand Honey, and honey-packages of all descriptions. Their office is at the same address, and here they are fitted to receive bee-keepers or their orders, entertaining the one and handling the other with a service that cannot be surpassed. If you are interested in bees, live in New England, and have not their catalog and circulars, drop them a postal. You will be well repaid. 5A6t

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APIS AMERICANA

That is, Naturalized Italian Bees, and acclimated to Northern Latitudes. No better bees on the face of the earth. Send postal for price-list. Address, 6A4t

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IF you need a nice yellow Italian Queen at once, send to **J. L. Fajen, Alma, Mo.** Untested, only 75c. Tested, $1.25. 3-frame nucleus with Queen, $2.75. Full colony, in 8-frame hive, $5.50. 6A6t

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Saves time, labor, and storage space. Keeps sections clean. Price, for 8-frame size, complete, 75 cts.; in the flat, 70 cts. Send for circular. United States patent for sale. 6A1t

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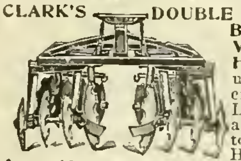

CLARK'S DOUBLE ACTION COMBINED CULTIVATOR AND HARROW, can be used to cultivate crops in rows, as a Listing Harrow, and when closed together is a Disk Harrow cutting 4½ feet wide. Drawn by two medium horses. Jointed pole. Perfect centre draft. A labor saver. Send today for FREE Booklet.

CUTAWAY HARROW CO., 913 Main St., Higganum, Ct.

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Tested Queen in April and May, $1.25. Warranted, in May, 75 cts.; $7.50 per dozen.

Italian, Carniolan, or Caucasian, at the above prices.

Virgin Queens of the above strains, 25 cts. each; dozen, $2.50. 4Atf

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Write us now for our Catalog and get low prices on good, honest,

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Our specialty is making Sections. All other goods up-to-date.

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10A34t **Please mention the Bee Journal.**

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Pharr's Goldens took first prize at 3 exhibits in Texas in 1907. We will furnish Golden, Carniolan, Caucasian, and 3-band Italian Queens, untested, $1.00 till June 1, then 75 cents. Tested, $1.25 till June 1, then $1.00. For large quantities, write. Our 3-band Breeders from W. O. Victor and Grant Anderson strains; other races from the best obtainable. "Prompt service and satisfaction," is our motto. Address, 3Atf

NEW CENTURY QUEEN-REARING CO.,
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We handle the well-known

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CYPRIAN, Carniolan, Caucasian, Italian Queens Select untested, $1.00. Select tested, $2.00 Bees $8 colony. Supplies and Honey. 6A1y
W. C. Morris, Nepperhan Hts., Yonkers, N.Y.

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CHOICE ITALIAN QUEENS

are the result of careful selection and breeding from the best honey-gathering strains of superior long-tongue Italians. Our methods will produce perfectly-developed, long-lived and prolific queens. If you want bees that will winter well, build up rapidly in the Spring, and roll in the honey, our queens will produce them.

We are now booking orders which will be filled in regular rotation, beginning May 1st. You should get in line by placing your orders early.

Single queens—golden or three-banded—$1.00; 6, $5.00; 12, $9.00.
Safe delivery and satisfaction guaranteed.
Send for circular—it's an eye-opener.

4Atf **THE GOLDEN APIARY, Dodge City, Kansas, U. S. A.**

Three Millions

The magic initials A. Y. P. E. are emblazoned on the Horizon of the Occident.

They stand for Alaska-Yukon-Pacific Exposition, which means the World's Fair at Seattle that opens June 1st and closes October 16 1909.

Six great transcontinental railroads will bring the people of the earth to this wonderful show, viz: Canadian Pacific; Great Northern; Chicago Milwaukee & St. Paul, Northern Pacific, Union Pacific, and Southern Pacific lines. Hundreds of steamships will augment the throng.

The Northwest Farm and Home—the oldest descriptive and agricultural magazine in the world—will distribute **free** at the Exposition several million copies elaborately illustrated and containing articles by well-known authors which will make the periodical invaluable.

Send for rate cards and sample copies.

Northwest Farm and Home
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J. E. HAND will begin the season of 1909 with improved facilities for rearing the

CHOICEST QUEENS

He has developed a system of queen-rearing that contains all the best points of other methods with none of the defects, including some **valuable improvements** of his own—in short, a system through which the highest queen development is reached by **correct** and **scientific** principles, which means that he is now in position to offer to the bee-keeping public a **higher grade of queens than is usually offered in the common utility classes,** owing to scientific methods which produce queens of a higher development than can be reared by the ordinary methods in vogue, and also to an **improved method of classifying queens** which strikes the word **select** from our list, and gives a **square deal to all.** No selects means no culls, and the highest grade of queens in the untested and tested classes. These queens will be reared from a superior strain of hardy Northern-bred **red clover Italians,** "the very best," and will be safely delivered to any address in the United States, Cuba, Canada or Mexico, at the following prices; Untested, $1.25: 3, $3.00. Warranted, $1.50: 3, $4.00. Tested, $2.00: 3, $5.00. Special prices on large orders. Valuable information free. Send for it to-day.'

J. E. HAND, BIRMINGHAM, OHIO, ERIE CO.

QUEENS
Of High Quality

Our queens are reared by the most **approved methods** by a **queen specialist** of 30 years' experience.

We breed the **Leather-Colored, Red Clover,** and **Golden Italians.**

We solicit the trade of all bee-keepers wishing to secure a **hardy, prolific race** of Italians, whose **honey-getting qualities** have been proven **superior.**

Select untested	$ .75	½ doz. $4.00	1 doz. $ 7.50
Tested	1.00	" " 5.50	" " 10.00
Select tested	1.50	" " 8.00	" " 14.00

Queens by return mail. Prices for large quantities on application. Circular free.

SIRES BROS. & CO.,
North Yakima, Wash.

Book on Fertilizers, Free

Every progressive farmer is making a study of this important subject. We have an 80-page book with fine colored cover which treats every phase of the fertilization question. Send 10c for 3 sample issues of The Fruit Belt and get this book free. Send today. Fruit Belt Publishing Co. 187 Herald Square, Grand Rapids, Mich.

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CAPONS bring the largest profits —100 per cent more than other poultry. Caponizing is easy and soon learned. Progressive poultrymen use

PILLING CAPONIZING SETS

Postpaid $2.50 per set with free instructions. The convenient, durable, ready-for-use kind. Best material. We also make *Poultry Marker 25c, Gape Worm Extractor 25c French Killing Knife 50c. Capon Book Free.*

G. P. Pilling & Son, Arch St., Philadelphia, Pa.

75c and $1.00
Queens on Approval

By return mail. If not satisfactory leave in Post-Office. Write for special prices on Bees and Supplies.

A. M. APPLEGATE, Reynoldsville, Pa.

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I WANT YOU

to get my new, handsome **Fashion Book,**

HUNDREDS OF LATEST STYLES

with illustrated lessons on Cutting and Dressmaking, **FREE,** and I will sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

I publish the **FARMER'S CALL,** a weekly paper for every member of the family. An especially interesting feature each week are the children's letters; and the Woman's Department is unusually strong and instructive. Among the special features for women folks is its fashions in which I show the **5c patterns.** Let me help you to save money.

MY SPECIAL OFFER

Send me 25c and I will send you the **Farmer's Call every week for one year** (about 1000 pages) and will send my big Fashion Book to you free. I also agree to sell you any pattern you want thereafter for **5c.** I can sell them for 5 cts. because I buy them by the thousand and don't make any profit. I don't want any profit. I want your subscription to the **FARMER'S CALL.** You will save many times the cost of my offer in a year. WRITE TO-DAY.

You can use this coupon—cut it out now and mail to me with 25c—1c and 2c stamps taken, but a quarter almost always goes safe:

JOHN M. STAHL—Enclosed 25c for Farmer's Call for one year, your book of patterns, postpaid, and privilege of buying patterns at 5c each.

Name..

P. O..

State.. 18

Very Special Offer

Send me 50c and I will send you the Farmer's Call for one year, the Illinois Farmer for two years, the Fashion Book prepaid, with privilege of buying patterns at 5c each. Use above coupon, but enclose 50c and write **I. F.** in the corner. Cut out the coupon right now, fill out, and send to

JOHN M. STAHL, J. P. Sta., Chicago, Ill.
(Prop. Farmer's Call for past 25 years.)

IF YOU WANT THE BEE-BOOK

That covers the whole Apicultural Field more completely than any other published, send $1.20 to

Prof. A. J. Cook, Claremont, Cal.,
—FOR HIS—

"BEE-KEEPER'S GUIDE"

Liberal Discounts to the Trade.

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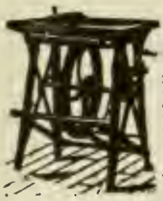
BARNES' Foot-Power Machinery



Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

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Western Bee-Keepers We Will Show You

how to save money. Send for our new catalog of the best Bee-ware made.

THE COLORADO HONEY-PRODUCERS' ASS'N, Denver, Colo.

SATISFACTION

is what I guarantee to those who buy my leather-colored Italian queens. Untested, June, 90c; 3 for $2.50; 6 for $4.75; doz., $9.00; 20 or more at 60c each. Later, 70c; 6 for $3.75; doz., $6.50; 20 or more at 50c each. 11Atf

S. F. TREGO, Swedona, Ill.

40 Years
Among
the Bees

40 Years
Among
the Bees

"Forty Years Among the Bees"

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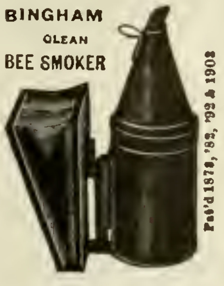

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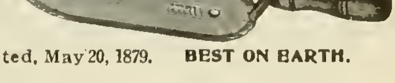

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A New York customer writes, "I have tried queens from a good many breeders, but yours are far ahead of them all." 4A4t

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Untested, 75c ; tested, $1. Two-frame nuclei with untested queen, $2.50 ; with tested queen, $2.75. 7A1t

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Three-Band Golden Italians
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Untested	$1.00	$5.50	$10.00
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Tested, $1.50; Select Tested, $2.00

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We can supply Red Clover and Golden Yellow Queens.

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Honey and Beeswax

Chicago, June 30.—There are practically no sales of comb honey. There is quite a quantity of last year's crop in the different houses that handle it, awaiting opening of the season, prices for which would at this time be a guess. Extracted in good supply, white being offered at 6½ to 7c; amber, 6 to 6½c; dark amber, 5½ to 6c. Beeswax, 30c.
R. A. Burnett & Co.

Toledo, June 30.—No new comb honey has arrived, and but little old on hand. Sales are made at 14 to 15c for fancy. Too early to say what new crop will be worth. Extracted white clover brings 7 to 7 1-2c in cans and barrels; amber, 5 1-2 to 6c. Beeswax, 26 to 28c.
The Griggs Bros. Co.

Cincinnati, June 30.—The market on comb honey is bare of fancy goods; there is an abundance of off-grade honey and old Colorado honey. We could sell some fancy goods at 14c. The demand for extracted honey is good; amber in barrels selling at 6 to 6 1-2c. There is no white clover honey as yet to offer. Beeswax is selling fair at $33 per 100 lbs. These are our selling prices, not what we buy at.
C. H. W. Weber & Co.

Kansas City, Mo., June 30.—We are now receiving small shipments of new comb honey; the crop of 1908 comb is about all gone except what is granulated. We quote: New No. 1 white comb, 24 sections, $3.25 per case; extracted, per pound (white) 6 1-2 to 7c; extracted, amber, per lb., 6 to 6 1-2c. Beeswax, 25 to 28c.
C. C. Clemons Prod. Co.

New York, July 1.—We find there is a little better demand for fancy and No. 1 white comb honey, and same is selling at from 13 to 14c per pound. Off grades are not in much demand, and we find slow selling at from 10 to 11c per pound, according to quality. Extracted, demand fair. New crop from the South is now beginning to arrive quite freely, and is selling all the way from 60 to 75c per gallon, according to quality. No new crop from California as yet, and we do not expect any for some time to come. Beeswax steady at 30c.
Hildreth & Segelken.

Indianapolis, July 1.—Not a pound of new comb honey on our market. Our market is entirely bare of comb honey, but some good extracted remains unsold from last year. Prices are not yet established, but a fancy article would find ready sale at good prices. Beeswax is in good demand, and producers are receiving 29 to 30c.
Walter S. Pouder.

Zanesville, Ohio, July 1.—There is a pretty fair demand for comb honey at the present time, but scarcely any for extracted. No. 1 to fancy white clover comb brings the producer 12 1-2 to 14c, and goes to the retail grocery trade at about 16c. For beeswax of good quality I offer 29c cash, 32c in exchange.
Edmund W. Peirce.

Denver, July 3.—Our last season's stock of comb honey is now all sold, but there is some in other hands, and very low prices are quoted in order to effect sales. We hope to get some new crop comb in during the next few days. Demand for extracted honey is very light, owing to hot weather and good supply of fruit. We quote, white, 7 1-2 to 8 1-3c; light amber 6 3-4 to 7 1-2c. We pay 25 cents for clean yellow beeswax delivered here.
The Colo. Honey-Producers' Ass'n.

Boston, July 1.—We quote: Fancy white comb honey, 15c; No. 1, 14c; white extracted, 8 1-2c; light amber, 7 1-2c. Beeswax, 30c.
Blake, Lee Co.

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That depends on whose name it is. It depends on what the name represents. It depends on the quality of the goods the name represents. It is **not** the name that makes DADANT'S FOUNDATION so well known and well liked, but it is the

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Manufacturer's stock just purchased by us must be moved at once in order to make room for another tenant. We offer for sale this job lot of one-piece Sections at this bargain price so as to avoid the expense of carting and storing these goods in our warehouses.

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These Sections are packed 500 to the crate and are ready for immediate shipment. The lot consists of a mixed assortment in the following sizes of **Off-Grade Sections**—some a little off color and some not quite smooth enough to qualify for No. 1 and No. 2 grades, but good enough for ordinary use:

4¼ x 4¼ x 1⅞ inches	Beeway	4 x 5 x 1⅜ inches	Plain
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Bee-keepers should take advantage of this exceptional opportunity to secure these Sections at this bargain price before the supply is exhausted. Manufacturers with but few exceptions are way behind on orders. A supply of these Sections on hand will be worth many times their cost in case of emergencies when you are in need of Sections and cannot get them, as they will come in handy to fill in with.

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No. 8

August, 1909

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No. 1.—Unloading Bees in the Alps.

See page 263.)

No. 2.—Setting the Hives in Place.

THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
146 W. Superior St., Chicago, Ill.

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By Return Mail Standard-Bred

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Prices for balance of season of 1909: One Queen, 75 cents; 2 for $1.40; 3 for $2.00; 6 for $3.75; 12 for $7.00. Superior Tested Breeding Queens, $2.00 each.—well worth $3.00.

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Send us **One New** yearly subscription to the American Bee Journal at 75 cents, and we will mail you a Standard-Bred Italian Virgin Queen **free;** or for 90 cents we will mail the Virgin Queen and the Bee Journal for a year.

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For a number of **years** we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

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Nemaha, Co., Kan., July 15, 1905.

✣✣✣

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Ontario, Canada, July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of my best colonies. N. P. OOLESBY.
Washington Co., Va., July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. MCCOLM.
Marion Co., Ill., July 13.

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Prices of Queens after July 1	1	6	12
Select queens	$ 75	$ 4 00	$ 7 00
Tested queens	1 00	5 00	9 00
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Young queens from our improved stock are the best security against poor seasons. Requeen now and have bursting strong colonies in the spring. We employ 500 colonies. Queens sent outside of United States or Canada, 25 cts. extra.

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Choice Home-bred and Imported Stock. All Queens Reared in Full Colonies.

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One Select Tested Queen	1.10
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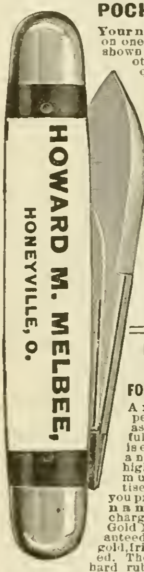

Your name and address put on one side of the handle as shown in cut, and on the other side pictures of a queen-bee, a worker, and a drone. The handle is celluloid and transparent, through which is seen your name. If you lose this knife it can be returned to you, or serves to identify you if you happen to be injured fatally, or are unconscious. Cut is exact size. Be sure to write exact name and address. Knife delivered in two weeks. Price of knife alone, postpaid, $1.25, With year's subscription, $1.75. Free for 4 new 75c subscriptions.

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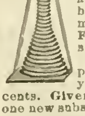

The Monette Queen-Clipping Device is a fine thing for use in catching and clipping Queens' wings. Four and one-half inches high. It is used by many bee-keepers. Full printed directions sent with each one.

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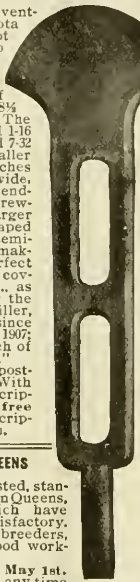

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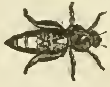

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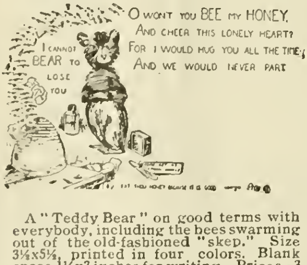
O WONT YOU BEE MY HONEY.
AND CHEER THIS LONELY HEART?
FOR I WOULD HUG YOU ALL THE TIME;
AND WE WOULD NEVER PART
I CANNOT BEAR TO LOSE YOU

A "Teddy Bear" on good terms with everybody, including the bees swarming out of the old-fashioned "skep." Size 3½x5½, printed in four colors. Blank space 1½x3 inches for writing. Prices—3 postpaid, 10 cents; 10 for 25 cents. Ten with a year's subscription, 90 cents. Six **given free** for **one new** 75c subscription.

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Forty Years Among the Bees, by Dr. C. C. Miller.—334 pages, bound in handsome cloth, with gold letters and design, illustrated with 112 beautiful half-tone pictures, taken by Dr. Miller. It is a good, new story of successful bee-keeping by one of the masters, and shows in minutest detail just how Dr. Miller does things with bees. Price alone, $1.00. With a year's subscription, $1.50. **Given free** for 3 new subscriptions at 75 cents each.

Advanced Bee-Culture, by W. Z. Hutchinson.—The author is a practical and helpful writer. 330 pages; bound in cloth, beautifully illustrated. Price alone, $1.20. With a year's subscription, $1.70. **Given free** for 4 new subscriptions at 75 cents each.

A B C & X Y Z of Bee Culture, by A. I. & E. R. Root.—Over 500 pages describing everything pertaining to the care of honey-bees. 400 engravings. Bound in cloth, price alone, $1.50. With a year's subscription, $2.00. **Given free** for 6 new subscriptions at 75 cents each.

Scientific Queen-Rearing, as Practically Applied, by G. M. Doolittle.—How the very best queens are reared. Bound in cloth and illustrated. Price alone, $1.00. With a year's subscription, $1.40. **Given free** for 3 new subscriptions at 75 cents each. In leatherette binding, price alone, 75 cents. With a year's subscription, $1.15. **Given free** for 2 new subscriptions at 75 cents each.

Bee-Keeper's Guide, or Manual of the Apiary, by Prof. A. J. Cook.—This book is instructive, helpful, interesting, thoroughly practical and scientific. It also contains anatomy and physiology of bees. 544 pages, 295 illustrations. Bound in cloth. Price alone, $1.20. With a year's subscription, $1.70. **Given free** for 4 new subscriptions at 75 cents each.

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Three copies for 50 cents; or the 3 with a year's subscription, $1.00; or the 3 copies **given free** for 2 new subscriptions at 75 cents each.

Amerikanische Bienenzucht, by Hans Buschbauer, is a bee-keepers' handbook of 138 pages, which is just what our German friends will want. It is fully illustrated and neatly bound in cloth. Price alone, $1.00. With a year's subscription, $1.50. **Given free** for 3 new subscriptions at 75 cents each.

THE EMERSON BINDER

A stiff board outside like a book-cover with cloth back. Will hold easily 3 volumes (36 numbers) of the American Bee Journal. Makes reference easy, preserves copies from loss, dust and mutilation. Price postpaid, 75 cents. With a year's subscription, $1.25. **Given free** for 3 new subscriptions at 75 cents each.

WOOD BINDER

Holds 3 volumes. Has wood back but no covers. Price, postpaid, 20 cents. With a year's subscription 80 cents. **Given free** for one new subscription at 75 cents.

BEE-HIVE CLOCK

A few of these handsome "bronze-metal" clocks left. Base 10½ inches wide by 9¾ inches high. Design is a straw skep with clock face in middle. Keeps excellent time, durable and reliable. Weight, boxed, 4 pounds. You pay express charges. Price $1.50. With a year's subscription, $2.00. **Given free** for 6 new subscriptions at 75 cents each.

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L.L. LANGSTROTH

AMERICAN BEE JOURNAL

(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

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GEORGE W. YORK, Editor
DR. C. C. MILLER, Associate Editor.

CHICAGO, ILL., AUGUST, 1909

Vol. XLIX---No. 8

Removal Notice

The American Bee Journal office has been moved once more. And now we hope it will be many years before it will be necessary to change again. We are located at 193 E. Superior St., Chicago, but after Sept. 1st it will be *146 W. Superior St.*, owing to renumbering certain Chicago streets at that time. So we have used this latter new street number throughout this copy of the American Bee Journal rather than to make another change within about two weeks.

So kindly remember that the American Bee Journal will be located at 146 W. Superior St., Chicago, Ill., hereafter.

This One Thing We Do.

By the way, we have severed our connection with all other kinds of business, and from now on expect to devote our time wholly to the old American Bee Journal. We again invite the hearty co-operation of all its readers in our endeavor to make it the best bee-paper possible. We wish to thank all who have so kindly helped in the past, and we trust that we shall merit the continued patronage of all bee-keepers.

A Look Ahead.

What is needed first, last, and all the time, is more subscribers. For some time we have been issuing a little over 9000 copies each month. We would like to make it 10,000 copies by Oct. 1st, and 12,000 by Jan. 1st. It can be done if only about one in each 10 subscribers will send in one new subscription before Oct. 1, and then 2 new ones between Oct. 1 and Jan. 1. Why not? It works this way:

The larger the subscription list we have the more advertising patronage we can secure. And then the more of both subscriptions and advertising money we can have the better bee-paper we can publish each month. So in the end it all tends to the benefit of all concerned.

If just half of our present number of readers would each send in one new subscription besides his own renewal between now and Jan. 1st, just see how the list would increase! But many can secure more than one new reader.

On several pages of this issue we offer liberal premiums for getting new subscriptions. We don't want any one to work for us for nothing. You can't afford to do so, and we want to pay well for the work of securing new subscriptions.

Now, please see what you can do about getting your neighbor bee-keepers to subscribe. It is not our aim to make more bee-keepers, but to make more intelligent those who already have bees. The American Bee Journal will always do this if given a fair chance. But it must be taken and read carefully, and then its teachings put into actual practise in the apiary.

Editorial Notes and Comments

Dr. C. C. Miller, Associate Editor

Saturday, July 31st, we had the very great pleasure of being with Dr. C. C. Miller, of Marengo, Ill., who is so well known to the whole world of beedom. Although in his seventy-ninth year, the Doctor was feeling very well, and enjoying life about as much as he ever did. He has only the home apiary to look after this year, which contains about 125 colonies. There was no white clover in his locality this season, and not very much of anything else, so that his honey crop will be a very small one. His bees seem to be gathering some honey-dew also, which, of course, spoils the white honey.

While Dr. Miller has been assisting us in various ways in connection with the American Bee Journal for years, we have now arranged with him to take the position of Associate Editor, thus putting him in a little closer touch, if possible, with its contents. Some 30 years ago he filled a similar position, we believe, on the American Bee Journal, and during all the intervening years he has written more or less for its columns, besides conducting the "Question-Box" regularly the past 15 years.

Perhaps no other bee-keeper in the whole world is so widely and so favorably known as is Dr. Miller. He has been a close student of bees and bee-keeping for almost half a century. His book on "Forty Years Among the Bees" stands alone as to its character and practical value to the honey-producer. He possesses not only a rich bee-keeping experience, but also exceptional literary ability to express in plain and concise terms anything he wishes to relate touching the subject of bee-culture.

Not only are we fortunate in having Dr. Miller associated with us in the conduct of the American Bee Journal, but all its readers will profit by the new arrangement.

The Doctor will continue to reside in Marengo with his bees, and will also answer questions for the American Bee Journal as heretofore.

Old vs. Young Queens

"Our preconceived notions and ideas often get rudely jolted when we are the least expecting it."

Thus says J. L. Byer, in the Canadian Bee Journal, and he then goes on to tell what good work he got from a lot of queens that had by a sort of accident been left without renewing, although he does not approve of having queens generally more than 2 years old. Editor Hurley tells about a lot of bees he bought last spring which had been left to their own sweet will in the matter of superseding for many years, and they did not suffer greatly in comparison with his home apiary in which every colony had received last year a young and vigorous queen from choice stock. He says:

> "Certain it is, we would not ask for better work from queens than we have seen from those under review. There must, of course, be old ones among them, and yet they have taken care of themselves for 20 years. Is it not possible that we often attribute to the queens faults that are the results of other causes?"

Is it not possible, also, that locality or the strain of bees makes it so that one man will get better results by leaving the matter of superseding entirely to the bees, while for another it may be more profitable to renew all queens beyond a certain age?

Is the Queen a Queen?

The editor of the Irish Bee Journal enters a protest against accepting C. P. Dadant's assertion in the American Bee Journal that "the term 'queen' is a misnomer, for the queen is anything but the ruler of the hive." Editor Digges argues that some of the greatest and best queens never ruled in the sense implied by Mr. Dadant, and concludes, "The mother bee, distinguished and pre-eminent above all others in the hive, is rightly termed a queen."

The point of difference is as to the meaning of the word "queen." Perhaps it ought to be conceded that Editor Digges, having lived under a queen ought to be able to give points to Mr. Dadant who has been living under constantly changing rulers of the male persuasion. As to the actual facts in the case, however, there probably is no difference of opinion. Mr. Dadant likely does not yield to Editor Digges in his appreciation of the distinguished pre-eminence of the mother bee, and the latter does not hold that the queen in any sense rules.

Disinfection or No Disinfection of Foul-Broody Hives

The question as to whether a hive that has been occupied by a colony afflicted with foul brood may be safely used again without first having been disinfected is one upon which opinions differ. Perhaps there has nowhere been given a more able summing up of the views on both sides than is to be found in the Canadian Bee Journal for July, although it is frankly intended by Editor Hurley to show that there is no need of disinfection. He takes as his text a paragraph from the British Bee Journal written by the well known Scotch authority, D. M. Macdonald, who quoted Dr. White, expert in bacteriology at Washington, Editor Root, and Editor Cowan as insisting that disinfection was necessary.

Editor Hurley admits that such an array of authority is formidable, but pluckily stands his ground and says he is not convinced. Dr. White says:

> "Use no bee-supplies from an infected apiary unless they are thoroughly disinfected . . . . It is always safer to allow the bees to go into a new hive or a hive which has been thoroughly disinfected."

Editor Hurley adroitly meets this by quoting Dr. White himself at the Detroit convention, who in answer to a question replied:

> "As far as I know, there has been no work done upon this line. The paper read that it would be safer to disinfect the hives, *but whether it is necessary or not we do not know.* If there were honey or bur-combs containing honey left in the hive, it would be almost necessary to remove them."

Plainly that makes Dr. White's position: "I advise that in all cases the hive be disinfected, but *I do not know that it is absolutely necessary.*"

As to Editor Root's position there is the following paragraph:

> "It is true that Mr. E. R. Root expresses an emphatic opinion that 'foul brood can be (and has been) communicated by the old hive alone,' but I doubt very much the absolute certainty of it. With so very many opportunities for the bees reaching infected honey, and the possibility of their taking some of it with them from the starters, I cannot understand how one can say *positively* that it came from the non-disinfected hives. But Mr. Root says further: 'While, 99 times out of 100, merely shaking on to foundation is perhaps sufficient, yet if there is one case in a hundred where disease is transmitted through the hive (and we have ample proof that there is), *all* hives should be disinfected.' My comment on this is that the exception should prove the rule—especially when the cause of that exception is not absolutely known."

The wonder is that Editor Hurley missed his chance to add this: "When Mr. Root says that if there is one case in a hundred where disease is transmitted through the hive *all* hives should be disinfected, he could hardly have been putting himself in the place of the man who really confronted the task of disinfecting 100 hives. Such a one would be likely to say, 'Well, if there's one colony in the hundred that will get the disease again, it will be easier for me to treat that one colony again than to disinfect the whole of the 100 hives, so I'll take my chances and omit the disinfection."

Summed up, the gist of Mr. Hurley's further argument is somewhat to this effect: Thousands of times old hives have been used without disinfection, and the cure has been complete; if there has been any case of the disease again appearing in a hive not disinfected there is a possibility that the infection came in some other way than from the non-disinfected hive; the inspectors, men who have grappled with the disease at close quarters for years, say there is no need to disinfect hives; and all this warrants the belief that the danger of infection from the hive is a negligible quantity.

Spacing of Brood-Frames

In this country it is the very general practise to space brood-frames 1⅜ inches from center to center. Yet there are some who prefer 1 1-12 inches, and they say that when bees build at their own sweet will in box-hives the larger spacing will be found to prevail. But do bees always know what is best for them?

John Silver, in the British Bee Journal, says:

> "To enable the warmth of a cluster of bees to go as far as possible in the spring, the frames should be spaced at 1 3-10 instead of 1 9-20. The same number of bees that cover 5 frames spaced 1 9-20, can cover 6 frames at 1 3-10."

According to that, it would seem that 1 3-8 is too wide spacing by 3-40 of an inch. Certainly, if we can have a larger quantity of brood properly cared for by closer spacing, that is something to be desired. And may there not be a still larger gain by spacing still closer? If brood-combs be 7-8 in thickness, and spaced 1 3-8, that leaves a passage-way of 1-2 inch between 2 combs. Now why not make that passage-way only 1-4 inch, and thus have the same number of bees take care of double the number of brood-combs?

At once some one will object that with such close spacing there will not be enough bees in the passage-way to keep up sufficient heat on a cold spring day. Surely there is a limit to close spacing. Is Mr. Silver sure he has not passed the limit with his 1 3-10 spacing? Are we sure that 1 3-8 does not surpass the limit? Do we know anything for sure about the matter, anyway?

Editor Hurley and Editor Root

A signed editorial upon the subject of disinfecting foul-broody hives appears in the Canadian Bee Journal, page 207, in the course of which Editor Hurley says:

> "But Mr. Root adds one more sentence to the above, which, in my opinion, has special significance. It is this: '**And we are glad** to note that our Government officials stood out square and clear on this proposition.' Why glad?"

No further explanation is given as to what is the "special significance" of Mr. Root's remark, and the "Why glad?" is left unanswered. But Mr. Hurley, maintaining his ground, closes the article by saying:

> "I am not an authority, and where doctors disagree I shall not attempt to decide. Possibly, however, my not being in the supply business may have something to do with it."

It will not be strange if the reader of that article, putting together the two passages quoted, and supplying what seems to be meant by innuendo, interprets Mr. Hurley somewhat after the following manner: "I am not in the supply business, and so I am inclined to use old hives; Mr. Root is in the supply business, and so favors the condemnation of the old hives that the new ones may be sold. He is glad that Government officials agree with him, for that helps the supply business."

Brantford, Canada, is a long ways from Medina, Ohio, and the likelihood is that Mr. Hurley is not intimately acquainted with the man E. R. Root. If he were, he would not for a moment thus judge him. Is it not possible that Mr. Root may be entirely sincere in the belief that it is a dangerous thing to use the hives in question? Editor Cowan is not interested in the supply business, and he holds with Editor Root. The same may be said of Dr. White and Mr. Macdonald. If three good men and true like these hold a certain belief, is it not possible that Mr. Root might hold the same belief even if he be in the supply business? And having that belief would he be honest, holding the position he does, not to insist vigorously that no risk should be run, even if some one without sufficient charity should cry out

"Self-interest! Supply business!" And why should he not be "glad" that Government officials should agree with him, thus helping to avoid the loss that comes from hives that might be dangerous, in his opinion?

Some one may say, "In accusing Editor Hurley of lack of charity are you not precisely guilty of that same sin? He has not said and may not have meant that Mr. Root's interest in the supply business warped his judgment in the least." Well, what did he mean then? It is true, come to think of it, that Mr. Root's belief can hardly be any aid to the supply business, for he does not advocate the destruction of the hive, but merely burning in it a handful of straw, and then using it. Yet what does Mr. Hurley mean—again it may be asked—by that "Why glad?" and by saying in connection with his belief that he is not in the supply business? If Mr. Hurley will say that he is entirely misinterpreted and will say out in plain English just what he meant, it will be a very great pleasure to offer him a most humble apology.

◆

Queen's Sting Not an Ovipositor

One can hardly fail to note that the sting of the queen bears no little resemblance to the ovipositor of other insects, and there have not been wanting good authorities who have claimed that at least the sting was an aid in ovipositing. A. D. Downes-Shaw, in the British Bee Journal, says:

> "On examining a comb with new-laid eggs, it will be seen that the eggs are almost central in the cell. Now the sting being curved downwards, if it were used as a guide, it would direct the egg to the lower angle of the cell, certainly not up to the center, and it seems almost impossible for the egg to be placed where it is usually seen if the curved sting is the guide."

The editor says that the view that the sting is used as an ovipositor "has not met with general acceptance, and the question has apparently dropped out of notice."

◆

Young Queens to Prevent Swarming

D. M. Macdonald, in the British Bee Journal, desires to know whether the introduction of a young queen of the current year's rearing may be relied on to prevent swarming. Editor Hutchinson says that with him the introduction of such a queen is a sure preventive. Dr. Miller says it is a failure with him. Gravenhorst says that if the young queen is not merely introduced, but *reared* in the hive, there will be no swarming till the following year. The temporary cessation of laying seems to count in the case. Dr. Miller says that with him the plan is practically reliable, as also is the plan of merely introducing the young queen after having the colony queenless 10 days. But he has had one or two exceptions.

Miscellaneous News-Items

The National at Sioux City, Iowa, Sept. 22-23

As we announced last month, the Executive Committee of the National Bee-Keepers' Association has decided on Sioux City as the place of meeting for the National Bee-Keepers' Association for this year. The time is September 22 and 23.

As we understand it, there may not be any special railroad rates beyond 200 miles from Sioux City during the dates of the convention, but within that distance there will be a rate of 1 1-2 cents a mile each way.

The Y. M. C. A. of Sioux City will provide lodgings for the bee-keepers, which will be quite a help, as the convention is held during the Inter-State Fair, when there will be crowds of people in Sioux City.

Meals will be 10 cents and upward, as desired.

General Manager France has requested that the attending bee-keepers have one afternoon in which to march in a body with banners, led by the President and Vice-President, to the Fair Grounds, to hold a session of the convention in the new building which is to be erected for the honey display at the Fair; and the judge of the bee and honey department may be selected from among the members attending the convention.

We expect to be able to publish the full program and any other necessary information in the September number of the American Bee Journal. The foregoing perhaps will do for a starter.

In the meantime, we hope that every bee-keeper that can possibly attend the convention will plan his work so that he may not fail to be present. It will likely be one of the largest and best conventions ever held by the National Association. It is in the center of a large bee-keeping territory, and the National has never before held a meeting in Sioux City. The local bee-keepers will certainly do all they can to treat the visiting bee-keepers right. And they know how to do it.

◆

"Bee-Keeping in Massachusetts"

This is the title of Bulletin No. 75, Part VII, by Mr. Burton N. Gates, and for sale by the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents (stamps not accepted). It gives the history of bee-keeping in New England, and especially in Massachusetts. The sources of honey, periods of nectar secretion, races of bees, hives, swarming, bee-enemies, bee-diseases, bee-keepers' organizations, and finally a summary of the subject as it appears in Massachusetts, are contained in the pamphlet. It is a very interesting Bulletin, particularly for bee-keepers in that State, and shows considerable research on the part of Mr. Gates, who is one of the experts in apiculture, working under the direction of the Government at Washington.

◆

Moving Apiaries in the Alps

We give a representation, taken from the "Calendar of Swiss Bee-Keepers," of the moving of a number of hives of bees. The bees, shipped by rail from Rapperswil, on June 16th, were unloaded at Lintal and taken from there by wagon to a point at 4600 feet of altitude, among the mountains of the Swiss Alps. Fig. 1 shows the unloading of the hives at destination, while Fig. 2 shows the placing of the same hives against the walls of the little "chalet," where they are to remain until the end of the late crop. Thus the apiarists take advantage of the early bloom in the valley and of the late bloom in the mountains. But no extensive amount of bee-culture can be carried on in this way. The hives are of the cumbersome Berlepsch pattern, sometimes accommodating two or more colonies in the same box.

◆

"The Friend of Bee-Keepers"

This is the name of a monthly bee-paper published in Japan, a copy of which has come to our desk. The price is 95 sen per year in Japanese money, which includes the postage to the United States. Of course, only those familiar with the Japanese language can read this publication. A copy of it can be had by addressing the publisher, Kikujiro Iwata, No. 61 Shirokicho, Gifu, Japan. We wish this new bee-paper every success.

◆

Improvement in Bees

F. J. M'Ilveen, Federal Independent Bee-Keeper, 11, as showing that breeding from the best makes improvement very slow, says that Dr. Miller's best crop was in 1881, notwithstanding that he has been improving his bees ever since. Evidently Mr. M'Ilveen has not been keeping close tab on Dr. Miller, whose previous records were left in the shade by the crops of 1903 and 1908.

◆

Back Numbers for 1909

We have quite a few numbers of the American Bee Journal back as far as January, 1909, so that any new subscribers who desire it can begin with Jan. 1, 1909, if they request it, so long as the back copies last.

◆

Apiarian Pictures

We would be glad to have those who can do so, send us pictures of bee-yards, or of anything else that would be of interest along the bee-keeping line.

American Bee Journal

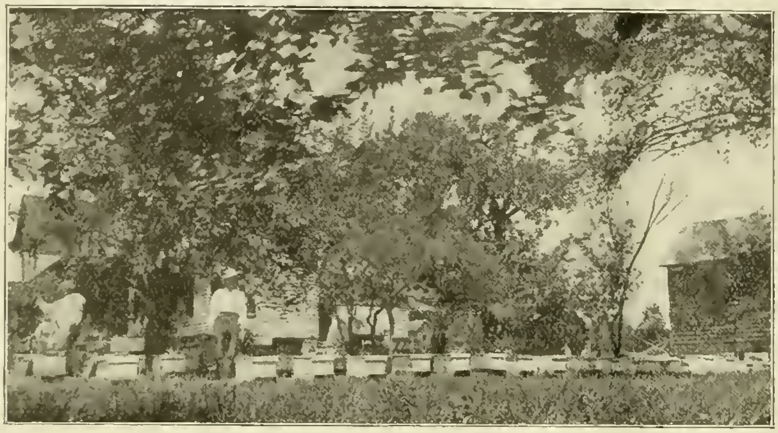
Apiary of L. Boomhower

I started an apiary 3 years ago with 3 colonies. Last summer I had 95 after they got through swarming, so you see I have been quite successful in getting a yard started, and like the business very much. I tried clipping queens this spring for the first time, on a small scale. From the experience I have had with 2 swarms that have issued from hives with clipped queens, I want no more of it. The first swarm that issued with clipped queen, I stood only a few feet from the yard. When they started to come out I stepped to the hive-entrance, and picked up the queen, saying to myself, "What an improvement this will be over climbing long ladders and sawing off limbs"; but to my surprise, when the bees commenced to return, they went into other hives that stood near, as well as the new hive I had placed on the old stand, having removed the old one to a new place. Part of the bees went into the new hive and I let the queen go in with them. In a few minutes I thought that all was not going as well inside of the hive from the way the bees acted, so I opened the hive to discover that the bees had pitched onto the queen and stung her to death.

Last year was a poor season on account of dry weather. I got but very little surplus honey. I use the 8-frame hive of Langstroth dimensions, also section-holders for comb honey, as I have no use for the T-super any more.

L. Boomhower.

Freehold, N. Y., June 1.



Apiary of L. Boomhower, of Gallupville, N. Y.

Pennsylvania State Convention

The Pennsylvania State Bee-Keepers' Association will hold its next convention in Lebanon, Pa., September 8 and 9, 1909. An excellent program is being prepared, and all bee-keepers who can possibly attend are cordially invited.

A. F. Satterthwait,
Middletown, Pa. *Sec.-Treas.*

Mount Union College, Alliance, O.

The sixty-third year of this Institution begins September 21, 1909. It is the college in which the editor of the American Bee Journal was a student many years ago. The new President, W. H. McMaster, began his work there in April. He is well equipped for the position, and will be an inspiration to the young men and young women who may come under his influence. If there are any of our younger readers who contemplate attending college, they will do well to send for a catalog of this most excellent educational institution. In 1864, John B. York (father of ye Editor), and in 1894, Lewis E. York (a brother) graduated from this College, and both were also among its instructors. So we are recommending a College with which we are well acquainted. Address, President W. H. McMaster, Room B, Chapman Hall, Alliance, Ohio.

Color in Bees

R. Beuhne, in the Australasian Bee-Keeper, says he has had Golden Italians, not a Cyprian cross, which he obtained at different times from 3 different American breeders of repute, and finds them objectionable where paralysis obtains. He quotes W. Reid as saying:

> "I kept this race (Golden) for some 12 years—they were free from paralysis, and the best of honey-gatherers. I sent queens to various districts and States. Wherever I sent them to cold localities they were spoken very highly of, but not so in the warmer districts; they complained of the Goldens taking paralysis badly."

Mr. Beuhne then adds this comment:

> "Most of the bee-keepers I know prefer dark bees. Of course it is possible to get Goldens immune to paralysis by a process of selection in breeding, but the leather-colored variety, in my experience, is less predisposed to that disease to start with, in my own and similar localities."

Spider-Plant Hardy

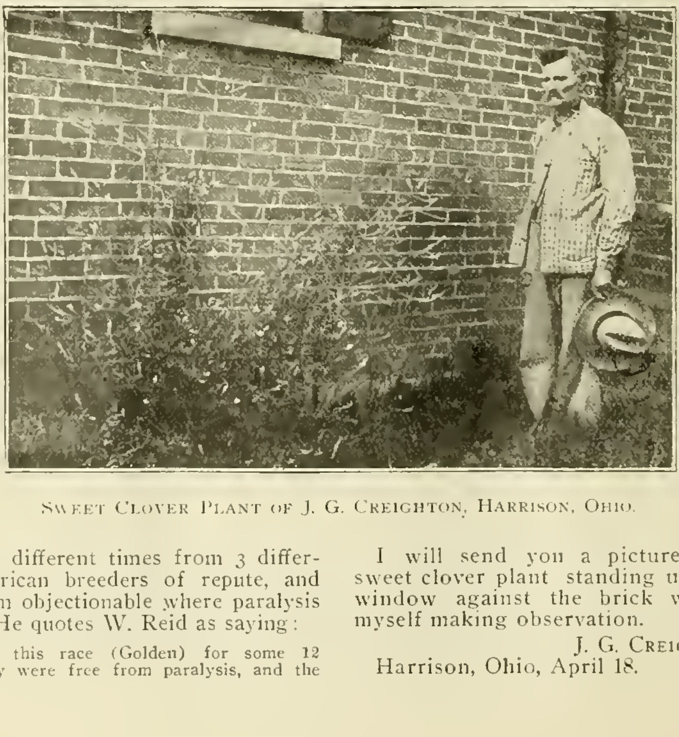
D. M. M. is told in the British Bee Journal that in that country spider-plant can be grown "only in the hot-house." Wonder if there is no mistake about that. In this country it grows readily outdoors in Northern Illinois, and probably much farther north.

Bees Working on Sweet Clover

One day I observed the number of bees working on a sweet clover plant standing near the door of my dwelling house. On July 12, 1908, at 7 a.m., I began making a count each hour of the number of bees working on this plant, with the following result:

7 a.m.—10	1 p.m.—15
8 a.m.— 8	2 p.m.—19
9 a.m.— 9	3 p.m.—17
10 a.m.—16	4 p.m.—18
11 a.m.—15	5 p.m.—20
12 a.m.—17	6 p.m.—11
	7 p.m.— 3
The total count	178

I have no doubt that there were several times that number visited this plant that day, and they continued to work on it through July and August. This report will show that they work on this plant from early in the morning until late in the evening. Do they all get nectar from this plant?



Sweet Clover Plant of J. G. Creighton, Harrison, Ohio.

I will send you a picture of the sweet clover plant standing under the window against the brick wall, and myself making observation.

J. G. Creighton.

Harrison, Ohio, April 18.

OUT-APIARY OF GEO. O. BERRY, OF WHITTIER, CAL.

Apiary of Geo. O. Berry

This apiary is located 19 miles southeast of Los Angeles and one mile south of Whittier, in the Citrus belt. The 120 colonies on this location produced 7 tons of extracted honey during May and June, 1908.

The past spring we had 450 colonies on the same location, but have moved 300 about 100 miles farther east to the edge of the desert, where I expect to harvest a big crop of wild buckwheat honey. The buckwheat flow starts about the middle of June and lasts till October or November. GEO. O. BERRY.

Cajon, Calif., June 16.

Our
Bee-Keeping
Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Stung!—Selling Old Comb Honey—Attic Bee-Keeping

DEAR MISS WILSON:—It has been a long time since you have heard from me. But I am still keeping bees, and have had some experience since I last wrote.

On July 13, I took off my first honey. I got up at 4 o'clock and went first to my crossest colony. I had on a big long-sleeved apron, and I neglected to put on a belt. The result was a bee got into my veil and stung me on the left temple. I had to go to the house and undo my hat, and it was several minutes before I could get the sting out. It was in my hair, and in very deep. So I had to give two good pulls before I got it out. I put on some tincture of myrrh, as I saw by the Bee Journal one sister did, and went back to the bees. In a half hour my left eye was swollen *tight* shut. All day it was shut as tight as though it were blind. But I managed to uncap and extract 150 pounds of delicious honey, and the next day I took off about 50 pounds of comb honey from another colony. All this from 5 colonies.

The doctor—whom I met on the street—told me the reason my sting swelled so was because it was so near the nerve center. It did not pain me in the least, but I had a "swell affair" for 3 days. The tincture of myrrh, I find, on me has a tendency to spread the swelling, but it takes out the fever and the itching. Only for that I am of the firm opinion that the less you fuss with a bee-sting the better.

I have just finished reading the July number of the Journal. And it is one of the best numbers—for me—ever issued. I was much interested in the article on page 242 of G. C. Greiner. I ran all my colonies, when I first started to keep bees, for comb honey. But I had so many calls for extracted honey that I decided to try some. I put it up in quart Mason jars as Mr. Greiner does, and sold it all last year, while I still have some comb honey left over. I bought new quart Mason jars which I find hold 3 pounds net of honey. And I sell them—jar and all—for 50 cents, making 15 cents per pound net for the honey. I find most of my customers prefer the extracted honey if they are sure it is *right*. As we get more honey when running for extracted honey here in the city, I run all my colonies but one this year for extracted honey.

Will you kindly advise me the best way to dispose of last year's crop of honey? I have been informing a prospective purchaser that I have a little last year's honey which I would sell for 2 cents a pound less than the new honey. But they all prefer "new honey." Must I make a larger reduction in price, or don't I go at it properly?

Last year when I was looking for queen-cells I had an unusual experience. In one hive was a queen-cell just about to hatch. I cut it out carefully and held it in my hand a moment to examine it better when, lo, and behold, the young queen opened the top like a trap door and stepped out. I took her to the house and put her into a queen-cage with a few bees. I fed them and made a new colony from frames taken from different hives and introduced the queen. That colony has proved one of the best I have from every point of view. The same day the same thing happened from another colony, but the queen died. It was a novel experience to me.

A number of people in the city have a colony of bees in the attic for their own benefit. The fad was started by a well meaning old man who used to keep bees. But the fad is not what it was supposed to be. No one of those having a colony dares go near the bees, and the result is they have to depend upon the man they bought them of for care. Now this man is getting old and forgetful. And the owner doesn't get any honey because he forgot to remove the cloth over the frames, or forgot to put on a super. So, in my opinion, the fad will gradually die out, except by a man—or woman—who can handle the bees himself or herself.

A young man called at my house about a week ago and asked if I would lend him my smoker, bee-gloves and hat. He kept bees near our house several years ago, but has since moved them to the country. He explained that one of the houses near where he worked had a swarm of bees in the attic. They were painting the house, and the bees were so angry that none of the men dared work on that side of the house. And the people had appealed to him for help. His idea was to take off the cover and put a screen on the top for ventilation and a screen over the entrance to keep them in. But I understood from a neighbor that they finally had to take the bees into the country. Evidently they did not take them far enough as they were coming back in small swarms, and the workmen were all too frightened to work. I informed them that they must paint their house early in the spring before the bees fly much, or later on in the fall.

I wish you a big honey crop and much success. (MISS) ELSIE A. CUTTER.

Grand Rapids, Mich., July 17.

You say you had to give two good pulls before you got the sting out. Please don't "pull" stings out; scrape them out with the finger-nail. Yes, of course it is not so easy to scrape a sting out that's among the hair, but it isn't easy to pull a sting there either. You may have to scrape several times more than twice, but you are not forcing the poison in at every scrape, and you are at every pull, for when you pull you pull by the poison-sac, and at every pull you squeeze the sac and force out more poison.

You are quite right that it's a good plan not to fuss much with a sting. Some one—is it A. I. Root?—says, "Get the sting out, then let it alone and think about something else." When you've had more stings they will not trouble you so much.

As to last year's honey, much depends upon how it has kept. If it has been kept in a dry, warm place, it ought to differ very little from new honey. But it may not have kept so well, and may now be candied. At any rate, you must come down on the price enough so that some one, *at the price*, will prefer it to new honey. You may also sell it in the liquid state. Unless it has been kept in the very best condition you can hardly extract it; but you can melt it. It should not be heated over 160 degrees. Set the crock or dish containing the honey in a vessel of water, put it on a part of the stove where it will not be very hot, and let it slowly melt. No matter if it is 2 or 3 days at it, cooling off several times. When entirely melted and cooled, take off the cake of wax and your honey will be nice.

Nougat Letitia

Take 2 pounds of honey, boil it in a cup of water and skim. Stir constantly and moderate the fire. When the syrup begins to thicken remove from the fire, and, stirring constantly, add 5 ounces grated chocolate and 12 ounces almonds coarsely chopped, warmed, and previously blanched and dried.

Let thicken, and pour in dishes

The Youngest Lady Bee-Keeper Driving Bees.

greased with butter or oil. Divide into squares before too cold.

As a matter of taste or economy there may be added, a few minutes before the pouring, 10 ounces of thick tapioca, warm, and cooked separately, stirring in with the whole. In that case increase the amount of chocolate to 6 ounces, and the almonds to 1 pound.—L'Apiculteur (French).

Youngest English Lady Bee-Keeper

In this country the women folk seem generally to be somewhat in advance of their sisters in other parts of the world in almost everything pertaining to the matter of securing an independent living. But for some reason, if one can judge from what can be gleaned from the bee-journals — perhaps one better say from the Bee Journals, British and American in England the sisters more generally take a part in bee-keeping than in this country. Even the little chicks sometimes have a part, and in a very public way. In the British Bee Journal appears a picture of a 7-year-old lassie driving bees, accompanied by the following note from her grandmother:

OUR YOUNGEST LADY BEE-KEEPER.

I have pleasure in sending you a photograph of one of the youngest bee-keepers in the world, my grandchild, Ethel Grace Seadon, who is in her 8th year. She goes into the bee-tent with her father and drives the bees while he gives his lecture, and is quite as skillful as a grown-up person in managing her little pets. She is to assist her father at the Beckenham Flower Show this summer, and her presence in the bee-tent, fearlessly handling the "dangerous insects" (as some people think them), is quite an object-lesson to spectators as showing how harmless bees are when properly managed.

Bromley, Kent. MRS. SEADON.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

Introducing Queens.

In speaking of introducing a queen to the colony that had its own queen accidentally killed, I am made to say in the last issue of the Journal, that the queen was introduced inside of 9 hours after the old queen was killed. Instead of 9 hours, it should read 2 hours, and I am pleased to report that the queen was safely introduced as surmised, and the colony stored 180 pounds of clover honey during a flow that lasted less than two weeks.

Please do not jump to the conclusion that we have had a great big crop from the clover, as such has not been the case,—but the colony in question was a little out of the ordinary, being so strong when the clover came into bloom, that the equivalent of 30 Langstroth combs were fully occupied with bees, brood and honey. Because of the colony being such an extra-good one, was all the more reason for my reproaching myself for my bungling accident with the queen.

Ontario's Clover Honey Crop.

From reports to date, Ontario will have a medium crop of clover honey of very fine quality. In my own case, at least, the quality is better than usual, and the honey is so thick that it is a lot of work to get it out of the combs, and as for getting it through cheese cloth—it is a slow process indeed.

Prospects were good for an immense crop from clover with us early in the season, but a very severe drouth literally dried the clover up, and all our honey came in, in about 10 days. Starting on June 18 (very early when compared with our abnormally late spring), the clover flow was phenomenal for 6 days, and then the dry weather with no dews at night, seemed to stop all nectar-secretion. After about 10 days of this dearth of honey, we had a light shower just when we had given up hope of any more honey for the clover, and then again for 4 days the honey came in with a rush. Strong colonies, with an almost total lack of swarming, enabled us to obtain a medium crop of honey, and at present the bees are immensely strong and ready for any flow that may come along.

Basswood, what little we have, is opening to-day (July 19), but there is no nectar in sight yet from that source, and we are not any too hopeful of getting any honey from it, as for some 7 years now in succession it has disappointed us. While the trees are comparatively scarce, as to what was the case some years ago, yet I am convinced that what we have do not yield nectar, and so it would be no different if the trees were more numerous. Aside from any possible yield from the basswood, buckwheat is all we can look for to yield any honey in the way of surplus after the clover is over, in our locality.

Buckwheat Honey in Ontario.

Speaking of buckwheat, I am reminded of the old saying, "All things come to those who wait," and I believe it is as true in the matter of bee-forage as in some other matters. This year I have been amazed in visiting some localities to find there, hundreds of acres of alsike being grown for seed, when only a few years ago not an acre of ground was devoted to that purpose. Here in our section where the clover has been grown so long a time, the tendency now is rather towards a restriction of acreage instead of an increase, this because of some weed seeds getting in the land, that is hard to clean out of the alsike, thus lowering the price of the seed so infected. Less than five years ago, I was moving my bees from the home apiary in the fall so that they might get a bit of buckwheat—this year there are 200 acres of buckwheat within 2 miles around this same apiary.

The presence of Russian thistle and quack grass in the land explains the growing of buckwheat in our rich farming land, as the farmers find the buckwheat a good thing to hold back these pests. The land is well worked till about the first or second week in July, and then the buckwheat is sown. The plant makes such a rapid growth that the remnant of the weeds that may be alive do not make much headway.

While the buckwheat does not yield honey with us as it does in some other localities, yet, one year with another it will more than furnish enough for winter stores, and naturally it is appreciated by most of the bee-keepers. Some, though, on account the liability of the buckwheat honey crowding close on the clover flow in some seasons, wish there was no buckwheat grown; but, personally, I count the growing of the plant a blessing to us, as during the past 3 poor years that we had in our section of country, no question but that the plant caused a good many bee-keepers, the writer among the number, to be able to have the balance on the right side of the ledger.

Tiering-Up Colonies — Bee-Escapes.

While there may be a question as to whether it pays to tier up colonies run for extracted honey with more than 2 extracting supers, there is no doubt but that in times of a rapid flow of honey, and the bee-keeper being very busy—especially if more than one yard is being managed—that it pays immensely, and saves a lot of worry, to have sufficient super-combs handy to enable one to give more than 2 supers to colonies that may so require them. At least it helps one at the time the flow is on, but as I view one yard that has a number of colonies with 3 supers on, yet to be extracted, I really wish the honey was off, especially as it looks as if the work will have to be done at a time when there is no flow of honey in progress.

I have never used bee-escapes in taking off the honey, and for various reasons believe I would not like them, yet I might possibly fall in line with their use, if I were to have them on hand to take honey off the 3-super colonies mentioned. Well, I will not give up hope of enough basswood honey coming in yet to enable me to work with pleasure while removing this honey.

At the yard in question, the honey-house is not bee-tight—so now you see the cause of my plaint. Of course such should not be the case, but I might as well confess that there are a whole lot of things in my apiaries that "should not be," and while two out of three of my yards have houses that are supposed to be *bee-exclusive*, often in the running of out-apiaries I do not know if it will pay to have anything in shape as in the case with those who own their home and have but one yard of bees, the same being right on their own property permanently. With a tight honey-house that will surely exclude all bees, I do not dread taking off honey at any time of the season, whether honey is coming in or not; but with a honey-house not bee-tight, that is altogether a different proposition.

Using the Capping-Melter.

I am trying the capping melter quite extensively this year, and so far my experiences are rather conflicting. By next month I hope to be able to give my ideas of the device, after having tested it more thoroughly. One thing is certain, it is quite a relief to have the cappings all out of the way, at the end of the day's extracting; but there are other problems that enter into the deal as well, which I will consider in a later issue.

Basswood as a Honey-Yielder.

It is the generally accepted idea, I believe, that basswood yields little if any pollen. This year, if any one was here now, he would easily be convinced of the fallacy of this idea. For the past week the weather has been showery and very cool for the season of the year, and today (July 22) the basswoods are in full bloom. On trees near the house here, the bees are working on the bloom during the rain which is falling lightly, and although they are getting but little nectar, nearly all the bees have minute light yellow pollen-balls attached to them as they enter the hives.

Strange to say, the bumble-bees are in full force in the bloom, and nearly every one of them has quite large loads of this same light-colored pollen attached to them, as they can be seen flitting among the blossoms. Personally, I have not the least doubt but that the pollen is coming from the blossoms on which they are working, and, indeed, what other reasonable solution could be made of the problem?

It is the first time I have ever noticed the like, and when I first saw the bumble-bees with the pollen, I could hardly believe my own eyes. I believe it is generally the case that when pollen is being yielded by a plant in an abnormal proportion, the nectar is scarce—at least this is always the case with clover, and at present it is true with the basswood, as practically no honey is coming in. Of course, the weather is really too cool and showery to expect nectar to come in from any source.

Contributed Articles

Hiving Swarms With Clipped Queens

BY G. M. DOOLITTLE.

A correspondent writes, "I have trouble hiving swarms having queens with clipped wings. Will you please tell us through the columns of the American Bee Journal how this is best done?"

The simplest plan, and one which I used for years, or till I concluded that I wished no more natural swarming for myself, is as follows:

Go to some woods where you can cut a light tough pole, which will reach to the top of your tallest trees, which we will take for granted are not more than 25 feet high. If you are in a locality where your trees are liable to cause your bees to cluster higher than this, then I would on no account tolerate natural swarming. Have the large or butt end of the pole sharpened so that it can be pressed into the ground whenever necessary, or when you may so desire. At the upper or small end of the pole, tie on a bunch of brown rags about 4 inches in diameter and 8 inches along to the top of the pole, when the same is ready for use.

When a swarm issues, proceed to find the queen, which is easily done by stepping to the rear of the hive from which the bees are pouring, when the queen will be seen, as soon as she comes out, hopping around in front of the hive on the ground. As soon as seen, put the open end of a wirecloth cage you will keep her in, down in front of her, when she will run in, after which you will close the cage with a stopper. This cage should be about one inch in diameter and 6 inches long.

When the queen is caught, secure the cage to the brown bunch with a wire or two, so bent that it will fasten the cage quickly and securely where you wish it. Now raise the pole in the air and keep it where the bees are thickest, when they will often begin to alight on the brown bunch with the queen. As soon as a pint or more have settled on the bunch, slowly carry the pole to where you can lean it up against something, and the bees will follow along and keep alighting as you go, and continue to do so till all have settled. If they do not alight on the pole they will soon select a spot to alight upon the same as they would if the queen was flying with them, for her presence is known to them just the same as if she had her wings whole and was amongst them in the air.

As soon as they begin to alight, place the pole in such a position that the queen and brown bunch comes at the place they are clustering, and leave it thus while you are preparing a hive for them. When they are partially clustered, raise the pole or push it up and out, so that the queen and bunch of rags, with the bees on them, is a foot or so away from their selected clustering place, when all the bees will cluster with the queen, after which you can carry them wherever you please, the same as you would had you cut off a limb with the cluster upon it.

Having the bees on our pole, they are carried to the hive where you wish to place them, when a small portion of the cluster is detached from the rest by poking them off with the pocket-knife, the hive-opener, or anything which is convenient, having these bees drop right in front of the entrance to the hive, into which they will run, setting up the call of "A home is found," when all the bees which may have taken wing through this process of detaching the pint or so of bees, or otherwise, will begin to alight down with those running in. When these are nicely started going into the hive, another poke of the cluster is made, dislodging this time a quart or so, and when this last lot are well under way into the hive, we are to shake all of the bees off the bunch of rags on the pole, shaking them along from one to 2 feet out from the entrance, so they will not clog the same by so many of them coming *en masse* in front of it at once. These last shaken off will at once begin to run toward those that have before started in, when the "line of march" will go steadily on until all are in the hive. If in going in, they hustle up to the entrance so fast as to clog it with bees, I take my knife and gently stir the bees directly in front of the entrance, which will cause them to run in with renewed vigor.

When nearly all of the bees are in, the queen is liberated and allowed to go in, when the work is done.

No matter in how bad a place they cluster, the operation of getting the swarm on the pole is always simple, and there is no need of being in a hurry, for they cannot go to the woods if left hanging on the pole in the hot sun all day, for should they uncluster and start off they would soon come back to the pole and queen, as I have had them do several times. This also does away with that bugbear in natural swarming, of having 2 or more swarms come out at the same time, as all bee-keepers having several colonies know so well about, for we need not work with sheets, fountain pump, or anything of the kind, till we are almost ready to give up in despair, to keep them from going together, as used to be the case in olden times; but simply let them cluster on the pole and we are at liberty to prepare the second, third or fourth hive, as the case may be, leaving a queen in front of each hive except the first, as the queen for that hive is on the pole.

When all are clustered, take the pole and carry it to the hive having a queen in front of it, when we proceed to hive them as at first, except that we only dislodge from the cluster on the pole about the right proportion of bees for one hive; then go the next, leaving enough for a colony there, and so on till all are hived as we wish them. All is done with a perfect ease and certainty, which no other plan can fully give.

I would often leave the bees hanging on this pole two or three hours, or till I got other pressing business done, when I would hive them at my leisure, the only caution being necessary was to see that the pole was so fixed that it could not break from the great weight of bees, and that the queens, not with the cluster, had a few bees with them to feed and care for them while waiting. In fact, it is always well to allow from 4 to 10 bees to run into the cage with the queen, when she is found in front of the hive, so that should any unforeseen thing happen to call the apiarist away, these would feed and protect the queen all day if need be. Then, if, toward the latter part of the swarming season, I wished to put 2 swarms in a hive so they would rush a whole lot of nice honey into the sections in the shortest, possible time, thus making them bring in an immediate return in cash, while if each were put separately in hives, nothing would be the result in section honey, I did not have to hunt out the queens for one of them was with the two clustered swarms, and the other was let go back into its old hive. I would as soon think of going to the old log gums and box-hives, as I would of managing an apiary on the natural swarming plan with queens having unclipped wings.

Borodino, N. Y.

Grading and Testing Queens

BY J. C. FRANK.

As many of our small bee-keepers (novice and amateur) don't know how to grade or test queens, nor know the meaning of such grading, I am writing this article with a hope of helping them to decide which queens to order. For I notice that many of them think that an untested queen is a virgin, or one that is not impregnated, and are at a loss to know which queen to order, and naturally send for some high-priced queens, when an untested one would have been just as good for the production of honey. Unless something very fine to breed from and improve the stock is wanted, an untested queen will be cheaper and just as good as the higher priced one.

Some of the terms used by bee-keepers in general are not of the best, and are misleading to the beginners in bee-keeping. But as they have been handed down to us by our forefathers we will have to stay with them.

VIRGIN QUEENS.

The newly hatched queen is called a virgin to distinguish her from queens that have been fertilized by the drone or male bee. Virgin queens when first hatched are sometimes nearly as large as a fertile queen, but they gradually decrease in size and when 3 or 4 days old they often look so small that a beginner is disgusted with their appearance, and, if he is hasty, is apt to pronounce them good for nothing. For the first 4 or 5 days they crawl about much as an ordinary worker-bee does, and it is often very difficult, if not almost impossible, to find them unless plenty of time is taken, and that is more than a busy apiarist can afford to spare. My advice is not to look for them, but insert a comb of unsealed larvæ just hatching from the eggs. If no cells are started, you can rest assured that the queen is there, without looking further, for the very moment she is lost the bees will start queen-cells on this comb, and it enables the bees to rear another queen in case the queen is lost on her wedding trip, which is often the case. This comb will also keep the bees from swarming out with the queen on her wedding trip, which they are apt to do if in a small nucleus containing no brood.

AGE AT WHICH QUEEN MATES.

I notice that the different writers on bees do not agree as to the age when a virgin queen leaves the hive on her wedding trip, some stating that they leave the hive when 2 or 3 days old. I am of the opinion that all who make reports of queens being fertilized when under 5 days old are mistaken. I never saw such a thing to happen in my apiaries, and in my queen-breeding experience I have noticed them time and time again, when but 5 days old, but I never knew one to do so when under that age. The fact is that I spend all my time during the queen-rearing season in the apiary among the bees, and use every possible means in forcing the young queen to fly and take her wedding trip and become fertile at the earliest moment possible. I never have found a young queen laying when less than 7 days old.

WHEN YOUNG QUEENS BEGIN TO LAY.

Young queens commence to lay from 36 to 48 hours after they become fertile. The time varies according to the season, and whether during the honey-flow. Nearly all young queens will start to lay in about 36 hours after mating. Later in the season, when no honey is coming in from the field, it will be from 48 hours to 2 or 3 days.

UNTESTED QUEENS.

After the young queen has started laying she is called an untested queen, for her worker progeny hasn't hatched yet, and the queen-breeder doesn't know whether she will produce pure bees or hybrids. These queens are reared from the very best breeding-queens, or from select tested, which are being tested for breeding purposes.

If the queen-breeder is giving his proper attention to the breeding of queens and sees to it that no hybrids or scrub drones are allowed to fly in his apiaries, 90 percent of the untested queens will prove to be purely mated, and for the honey-producer are just as good as the higher priced queens.

SELECT UNTESTED QUEENS.

These are selected from all the untested queens in the apiary. These queens are good layers, very prolific and vigorous. They are large and well formed, active on the combs, and somewhat brighter in color than the average untested queens. For real business an untested queen often proves to be as good as the select untested queens. As a rule they prove to be tested queens.

TESTED QUEENS.

A tested queen is one that has been laying for 30 days or more and her progeny (or young bees) have already emerged from their cells. They have been in the hive long enough so that their progeny can be tested and know that they are purely mated. If they are mismated they are called hybrids.

SELECT TESTED.

A select tested queen is one that has been selected from the tested queens on hand in the apiary. They are purely mated, are good layers, very prolific and vigorous. They are large and well formed, active on the combs, and somewhat brighter in color than the average tested queens; their progeny is also somewhat brighter than the progeny from a tested queen.

BREEDING QUEENS.

A breeding queen is one that has been in the hive from 50 days to one year, and has been tested not only for her worker progeny but for her queen progeny as well, and found pure in every way. To test a breeding queen properly she should be in the hive for the entire season. Her bees should be well marked, uniform in color and size, prolific and hardy. They should be good gatherers, and cap their honey white.

Dodge City, Kans.

A Study of the Eyes of Bees

BY C. P. DADANT.

The discussion of the question of distances traveled by bees in search of honey has raised the question of eyesight in bees. On this point, as in many others, there seems to be some difference of opinion.

As my readers are aware, the honey-bee is provided with 5 eyes, 2 very large compound eyes, placed on each side of the head and three small eyes called scientifically "ocelli," arranged in a triangular position at the top of the head.

There is uniformity of opinions to the purpose of the small eyes. The honey-bee needs to see in the fields at considerable distance, but it needs also to see in the hive at a very close range, and entirely in the dark. The ocelli seem fitted for that purpose. Thos. W. Cowan, in his anatomical description of the honey-bee, quotes Müller, a German, as remarking that, "from their structure, their power of vision was confined to the perception of very near objects." Lowne, an English entomologist quoted by the same author, says that the function of the ocelli is the perception of the intensity and direction of the light rather than vision in the ordinary acceptation of the term. They conclude that the ocelli are useful in dark places and for near vision. Bees certainly cannot see a distance, in the dark, and the use of the eyes must be confined to a reach of less than 2 inches when inside of the hive. All apiarists who have tried handling bees in the dark know how they fly at random and crawl about over or through one's clothes. But the least motion, within a couple of inches near the entrance in a dark night will draw their attention and cause them to fly at the intruder in defense of their home. They will even resist intrusion more promptly at night than in the daytime, probably because during the day they can better discern the actions of persons at a distance and more readily realize whether danger is at hand. Bees do not take offence at slow motions, and this is plausible. We will ourselves beware of a nervous horse and avoid his heels more carefully than those of a peaceable animal. The bees seem to have as much tact in recognizing nervous persons as the most intelligent of our domestic animals, and even more than human beings possess.

Cheshire appears to have a like opinion concerning the ocelli of the bee, saying that they are very convex and are adapted to short-distance vision. The French entomologist, Girard, expresses himself in almost the same words, saying that the ocellus presents a very convex cornea in connection with a microscopical function at very short range. One writer, however, Rauschenfels, in his explanation of the excellent microscopic studies of Count Gaetano Barbo, engraved by Clerici in the '70's, says that the ocelli may serve to see at great distances.

The compound eyes are formed of a great number of facets. Cowan says from 3500 to 5000 in the worker, and many more in the drone. Cheshire, whose authority seems to be accepted even by foreign scientists, places the number of facets in each compound eye of the worker-bee at about 6300, which would give that insect 12,600 different eyes, turned to almost all points of the compass. Most of the writers spend a great deal of time arguing whether the bee does not have a multiple reproduction of the objects seen, similar to what we see when we look through a prism. It seems to me that it is only necessary to think of our own eyes, two in number, yet not giving us a double sight of objects, to understand that the numerous eyes of the bee give her only a single view of objects seen; but the field of vision given by so many eyes is greatly enlarged over our own. By closing one eye we immediately perceive how much reduced becomes our field of vision and we thus realize how much more and how much better we could see in all directions, if we were possessed of compound eyes, returning all their combined impressions to one nerve center.

That the compound eyes are of use to see at a distance is doubted only by one scientist, whom I mentioned in a previous article. Mr. Bonnier, a Professor at the Sorbonne, denies the sight of bees at long distances and claims that they can find their home, if they are blinded with a preparation of darkened collodion. Yet he acknowledges—nay, he teaches—that which the merest novice in apiculture knows, that the young bee, at her first flight, carefully scans the surroundings of her hive before taking her departure for the field. The first flight of the young bees is an interesting sight, for they circle over and over again around the entrance, enlarging the circles as they go until they are lost sight of.

How far can the bees see? Some one calls my attention to the fact that Lowne has calculated from the angle formed by the lenses of the compound eye that at a distance of 20 feet, bees can distinguish objects from one-half to one inch in diameter. But can they see a field of clover 2 miles away, if the configuration of the country is such as to permit them such a range? This is a point that I would like to see settled. Personally, I doubt it very much, even though I see it supported in an editorial in Gleanings for July 1st. The editor, E. R. Root, seems to agree with me as to the range of bee-pasture—he puts the limit at a mile and a half for ordinary range, but thinks that in a hilly country bees will fly farther because they can see farther. I am enclined to think that their olfactory organs are even more acute than their sight and it seems to me that, when they go to greater distances than above mentioned, it is with the guidance of the odor of large fields of strong-smelling blossoms, such as buckwheat or basswood.

In spite of their marvelous eyes, bees make errors in location. Many young bees, after the first flight, return to the wrong hive, if they happen to be located where many hives of like form and size are closely gathered. These errors of the young bees can be most easily detected when a new race is introduced in the apiary. A few yellow Italians are readily traced to the hive of common bees which they may have entered by mistake. If the season is favorable, as they do not come as robbers, they are often very peaceably welcomed by their neighbors.

The eyes of the drone are very much larger than those of either workers or queens. They appear to occupy the entire side of the head, and join together at the top, so that the ocelli are in front of them instead of between them. Why such powerful sight—26,000 facets in the eyes of a single insect? Because the drones spend their time of flight seeking for a mate. The queen must be found and met, in the air, on the wing.

Even if we were to grant to the bee a "sense of direction," such as is claimed for them by Bonnier, which would enable them to find their home from a point not previously visited by them, and which would be a sort of instinct, we would still have to recognize that their eyes must be powerful to enable them to find the hole in a tree in the heart of the forest, when seeking for a new abode for the swarm. That the bees should find the key-hole of the honey-house, to carry away the honey, may be explained by their organs of smell recognizing the presence of their product in that honey-house, but the hollow tree has no smell that can attract them. Can we deny the existence in them of even more acute senses than our own?

Hamilton, Ill.

* * *

Management of Swarms

BY EDWIN BEVINS.

This is July 17. Swarming began in this yard in the last days of June, and has been going on daily ever since. Some days I had the satisfaction of seeing 2 or 3 swarms cluster together. Saved work. I used some repressive measures to delay and prevent swarming, but repressive measures this year do not repress much. The colonies from which swarms issued were treated in a variety of ways. One was divided into 3-frame nuclei, each nucleus having a comb with one or more sealed queen-cells. Many others had a 3-frame nucleus taken from them and the other combs used to help colonies not quite strong enough for work in supers. A few were allowed to recuperate on the old stand. In the beginning I did not want any increase at all, and when I looked around a few days ago and saw a lot of hives from which swarms had gone, and a lot of supers on them in which no storing was being done right in the midst of a honey-flow, I felt like saying with Tennyson,

> "I would that my tongue could utter
> The thoughts that arise in me"

—without swearing. I had read and pondered a good many of the ways advised for the prevention of increase, but was not satisfied with any of them, but the matter was getting serious. The hopes for early section honey to sell were going glimmering. A few days ago I prepared a hive for the next swarm with a set of empty combs and about the time it was ready a big swarm was clustered ready for it. As soon as the bees got quiet in the hive, I placed the hive under the hive of a colony that had swarmed a few days before. The combs of this hive were pretty well filled with honey, and made good dummies. I let the hive with the swarm stand under this for about 48 hours, then took it away and shook the bees off their combs in front of the other hive. There was no fighting at any time, and in a few hours the bees had entered the supers. Since then I have treated others in the same way, and shall so treat all that come.

The lesson is that if you can not keep a swarm and its colony together you can keep together a swarm and some other colony that has swarmed.

I have not tried this with my swarming colony that had brood and queen-cells yet in it, feeling doubtful of the outcome. Perhaps it will work all right if queen-cells are cut, and perhaps will work on the parent colony if queen-cells are cut. I have so far had plenty of colonies that had no queen-cells. Probably some or all had virgin queens. The bees settle the matter of supremacy to suit themselves. Some of the hives I use for catching swarms have mostly frames with starters of foundation.

The swarms have been so accommodating as to cluster low, and I have hived all but 3 or 4 without assistance. I have used a method this season that I have not practiced before. I set the hive with cover removed directly under the cluster, give the branch a sharp shake or rap, and the cluster lands right on top of the brood-frames. The bees are not long in getting down onto the combs.

For the benefit of some young bee-keeper who is not yet fertile in resources (he will have to become so if he keeps many bees, and keeps them long), I will tell how I hived without help a large swarm of bees that had clustered on the highest branch of a rather tall apple-tree. The branch was of arching form, and the bees were out a few feet from the body of the tree, or I might have had trouble. I placed a hive directly under the cluster, elevated on a big box so that the top of the brood-frames was about 6 feet above the ground. The bees were about 10 feet above the top of the hive. Usually when bees are detached from a limb at such a height they will scatter in the air, but this cluster was so heavy that I thought I could land a good part of it on top of the brood-frames. I cleared away some twigs and small branches in order to make a clear passage, and then went up the tree. A vigorous shake dropped about one-third of the bees on top of the hive and they went mostly down, while others flew about, acting as decoys for the rest. Some of these clustered again in the same old place. I gave the limb a rap and sent another lot to the hive. Then more gathered on the limb, but before rapping it a third time I took the precaution to button my shirt-front. After detaching them a third time I drove a cloud of smoke right into the clustering place and all the bees were soon in the hive.

In the article which appeared in the July issue I told how to change a Dadant hive to an 11-frame Langstroth, and inexcusably omitted to say that the hive's length should be shortened one inch. This is easily done with the hives as I make them. If you have the factory made hives, better leave them as they are. I am not expecting that anybody will make any 11-frame hives in any way.

In a recent issue of the American Bee Journal, I was made to mention Mr. Chapman's apiary as his *old* apiary. It should have read his *whole* apiary.

I have read of many ways of getting and keeping swarm and swarming colony together during the harvest, but have not been satisfied with any of them. The Heddon plan is too slow, and most of them require too much labor, and involve the building and care of a new set of brood-combs, which very likely you do not want.

Leon, Iowa.

Selling Extracted Honey

BY G. A. BARBISCH.

For years I have been in the habit of selling extracted honey from 8 to 10 cents a pound, according to the amount taken by the purchaser. Two years ago this summer while out on the road taking orders for extracted honey, I met another bee-keeper who lives within 4 miles of my home. Enquiring what he charged for good, well-ripened honey, he told me 9 cents a pound. What was my surprise when a few days afterward I learned that all around in my neighborhood he had offered honey for 7 cents a pound, simply to cut down the price for me; and still greater was my surprise when I again learned that within a short distance of his home he sold honey for 9 cents a pound. Is it not a disgrace that there are such bee-keepers in Minnesota? Of course, an intelligent and up-to-date bee-keeper would do no such a thing. It is only those shiftless and ignorant bee-keepers who have no respect for their fellowmen who can do such a thing.

But right here let me say that nine times out of ten, if you ask any of those bee-keepers to subscribe for a bee-paper they will say, "No," telling you they do not need a bee-paper because they think they know all they need to know. I have read and studied a number of the best bee-books, take three bee-papers, and every time I find something new and of great interest and sometimes worth dollars to me. When will the bee-keepers of Minnesota wake up, organize, and demand reasonable prices, as other intelligent bee-keepers do in other States? Why should we sell our best honey for 7 cents a pound when we could just as well get 2 to 3 cents more? We all know well that everything has raised considerably in price the past years. Why should we sell our honey as cheaply now as it was sold 10 or 15 years ago?

To give an example of what honey will bring if not misrepresented, let me state the following: Last summer a man in New Jersey wrote to me asking for samples and prices of my honey. I wrote and told him I could not sell and ship honey such a distance unless I would get 9 cents a pound. Great was my surprise when I received a letter from him a few days afterwards stating that he would gladly pay me 10 cents a pound, and would pay for the cans and freight besides. Of course, I sold him a lot of honey, and what satisfied me most, he and all his customers are well pleased with the honey, and he has already placed a large order with me for the coming season.

For the past two years I have not been blessed with good health, but how thankful I am that I am still able to look after my bees! How I love to watch the bees bringing in loads of pollen and nectar, how busy they are all day long, and what a great lesson they teach us who are trying to walk uprightly! How as the bees' toil sweetens others, so must we toil and work for the good of our fellow men, and try to make life sweet for others, then when we have reached our journey's end in this world, how pleasant it will be when we look back to the past with the assurance that we have done what we could, and when then our eyes shall close in death we will be able to say with the Apostle Paul, "I have fought a good fight. I have finished my course. I have kept the faith. Henceforth there is laid up for me a crown of righteousness."

La Crescent, Minn.

No.8.--Bee-Keeping in Colorado

BY R. C. AIKIN.

While there are good hives and also poorer ones and supers that are better than others, more of the question of success depends upon the man in charge than on any other one thing except the honey-flow. So if you have no knowledge of first principles of bee-nature do not think that any man's patent hive is going to do the business if you furnish the money. It is not the question of a big or little hive, of a T or a section-holder super, nor of the use of full sheets of foundation either in the brood-chamber or the super.

Not knowing whether you will have a good or poor flow, or whether you will have the bees to gather a good flow if it should come, *you* produce as best you can, conditions that favor what you want. In comb honey the best rule for sections is to use full sheets of comb foundation, for they are more of an inducement to the bees to start and rapidly work in the boxes, to better fastening the comb to the wood all around, and to making a pretty even finish.

When the supers are put on do not give too much room at first, for if you put 2 on and there should be but flow enough for one, you will likely get 2 partly finished, and neither done. When the first one is well started and conditions of flow and strength of colony show that they can and will soon have this full, put another on top of it. When the bees have worked up through the first super and nicely started in the second, if the first one is practically full, lacking only sealing, the position may be reversed, raising and putting the other under it. And here you are to be pretty keen in your estimate of the strength of flow and the ability of the bees to carry on the work properly, the temperature of the weather playing an important part, too. Should there be plenty of heat to keep all well heated, and if the flow be strong with great abundance of bees and all indications point to filling both these supers and need more room before you get to them again, give a *third* super on *top*; and under the most favorable conditions where there is all reason to think the third one not enough, put the fourth one on top. In some cases you may do well to arrange them with the second super that was started, on first, over this an empty, next the full, capped with an empty. These manipulations require the keenest of judgment and watchfulness.

A common way of adjusting supers has been to keep lifting the ones being worked and adding the new one at the bottom; but if this advice be followed you will surely soon come to grief with a lot of uncompleted sections, for the bees will proceed to work those new ones next the main hive and not finish the others. Be very careful and not stretch the colony too much. With extracted honey you can stretch if you wish, and the only harm that is worth considering is thin extracting combs, making more work in extracting, but you get the quantity just the same. But to stretch and have say 4 supers all partly worked and none finished is serious. When the one next the brood-nest is full, if the flow is good, the colony strong, and weather warm, they will not hesitate to work up through the full one and occupy the empty, yet the lower one will be plumply filled and well sealed.

At this point we will consider again the condition we find in the brood-chamber. If you took away the brood at the beginning of the flow and left the colony on full sheets of foundation with a young queen, we will expect that queen to make brood fast, and have at least a very fair amount of it, and most likely well stocked. Again, the same arrangement with an old queen, that is, one not of the present season's rearing, the condition will be very similar, *possibly* not quite so much brood as the younger one has produced, and a little more tendency —yes, a decided tendency to lay in every drone-cell available. But if you have still the same arrangement but with an old queen past her prime, there will be much less brood, the same tendency toward drone, now and then an effort at supersedure that may and often will result in swarming. Remember that populous colonies in prosperous times want their queens to do business in proportion to the other business going on in the household, else there is dissatisfaction and loss of energy; and, as indicated, often loss, or at the very least the annoyance of swarming. Besides this the queen that does not keep up the brood leaves just that much room that receives the honey instead of its going into the super.

Next we will consider the two other plans of fixing the brood-chambers. One was to take away the queen but leave the hive full of brood and let them go on and rear queens, removing all but one cell 9 or 10 days after. Two, leaving only one comb of brood with the balance of the frames having starters only, the cell building and clipping out of course subject to the same rules. With the first leaving full combs of brood, we find as fast as the brood hatches the honey goes into the empty cells so that by the time the young queen has hatched and is ready to lay, all brood is out and all those combs are full of honey. Being now broodless, there is not the least likelihood of swarming. The workers are so anxious to equalize conditions and get brood that they will uncap and move honey out of these combs and simply *make* room for brood, and if the management is proper there is plenty of storage-room above, and that honey goes to the super. In the case where one comb of brood was left with starters the condition is very similar, but with this difference: The combs are new and white, and some drone-comb has been made—they will all be loaded with honey to be removed and put above as in the case of the full set of old combs. The drone-comb will not be used for brood, for since the hives are now totally bare of brood, and all inclination to swarm is gone, the first and foremost thing in the brood line is workers to take the place of those now in the field and fast aging; neither queen nor workers have any use for the drone-comb, hence it will be left usually filled with honey, they will often cross over two or more drone-combs, going to the outside combs if necessary, to find the needed worker-cells. The advice in conventions, in books and journals, has been so constant and emphatic against drone-comb that the average apiarist would about as soon think of killing his bees as to allow the building or presence of drone in the hive.

At any time during the fall—yes, any time between the time of the present honey-flow and the time the next spring when the colonies are again getting strong enough to begin swarm preparations by starting drone brood—those drone-combs can be removed, either extracted and used for extracting combs or melted into wax. If you are a comb-honey producer exclusively, and have no extractor, just melt those combs and get as good an article of "strained" honey as any one could wish for table use. For every 100 pounds of honey you will obtain about 4 pounds of wax—about a cent a pound for the honey. Or you can sell those same drone-combs of honey as chunk or broken comb and get just about as much for it as for section honey. It looks nice to read flowery statements of the beauties of foundation and the combs one can have from them, of the total absence of drone-comb and drones, of the great cost of rearing a few drones, of how to shave off the heads of the drone-brood and thus empty those cells that another batch of larvæ may be so much *sooner reared* in them, so producing two generations of the naughty fellows, where if left to hatch there would have been only one. We have been tending of late years to too many fine theories, and not enough of good common sense in many of these things, and when the season closes our foundation bills and beautiful combs have cost us more than we get out of them. As a general rule I am and have been, opposed to the wholesale use of foundation. Bees want to build *comb* as well as rear brood or store honey in it. I do not mean *want* in the same sense as a reasoning creature like man wants; I mean they follow instinct and secrete wax involuntarily, and your drone-combs do not cost you but little if anything.

I do not see that there is much more that I can say regarding the super manipulation—this is nearly all there is to it. When you have the bees and have put them under control, have put on and manipulated the supers in their arrangement and relation to the hive and to each other, as outlined, you have the basic principles of successful management of this part—you cannot make the nectar. These supers are to be removed, of course, as fast as ready and you can get to them. They can be taken off as you come to them during the flow when robbing will not annoy, by just smoking the most of the bees down and then standing them on the ground or hive-tops until ready to load for home. In time of robber-bees you can use escapes if you like; I prefer to smoke down about all the bees, then put the super right into the house, wagon or tent, and let them escape through a cone in the window screen.

(To be continued.)

Foul Brood Considered Again

BY DR. G. BOHRER.

On page 239 I called attention to the certainty of ridding an apiary of foul brood, it being a germ disease, by removing the germs which are known to be in the honey, together with the combs, beyond the possibility of access by the bees of the infected apiary, or any other. I referred to the Baldridge method of treating the ailment, which I regard as being a successful method if the bee-escape used is a perfect one. But not as speedy as the McEvoy plan.

This season I have made it a rule to inspect all my colonies carefully once each week, excepting one colony which came through the winter and early spring strong and vigorous, and when the fruit-bloom began to show up it was as far as could be seen at that time free from foul brood; and a super was put upon the hive in which they at once went to storing honey. The combs being already constructed, all seemed to go well until they began to seal the honey in the super, when they slacked up and acted as if they might be queenless, whereupon I looked through the brood-nest and found a number of cells with foul brood in 5 combs out of the 10 this hive contained. The balance were well filled with sealed honey. In the meantime there was a free flow of alfalfa honey, and the bees of other colonies paid no attention to this infected colony while the hive was open. I at once determined to treat them on the McEvoy plan and prepared a hive to receive the bees by putting starters of comb foundation in each of 10 top-bars, leaving off the end and bottom bars. The starters were about one inch wide.

There was no other colony nearer than 6 to 8 feet of the one to be treated.

About 7 p. m., I lifted the colony from its stand, setting it by the side of the same, and placed the hive for their reception on the old stand. Then I at once opened the infected colony with as little disturbance as possible, in order to prevent them as far as could be, from filling themselves with the infected honey of their hive. I lifted out one frame at a time, and *did not shake*, but brushed the bees off in front of their new home. The brush I used was simply a bunch of catnip in full bloom. This would not scratch the combs, so that no leakage of honey could take place. While in case I had used a rough brush, or shaken the bees, more or less honey would in all probability have been scattered about the hive.

All the combs were put beyond the possibility of being reached by bees. The bees all ran into their new home and at once went to work with renewed energy. And at the end of 48 hours, the bees not having been gorged with the honey of the old hive, had by this time consumed all the honey with which they had left their old home. So that it was safe to give them full sheets of foundation, which I did, and now they show no symptoms whatever of disease but are hard at work, as much so as any colony I ever had in my possession. Had these bees been gorged with honey at the time I transferred them I would have left them 24 hours longer on the starters I first gave them. In the meantime I shall look them over carefully during the next 6 weeks following their transfer, and if a vestige of the ailment shows up, I will destroy the colony, as it will be too late in the season for them to build another set of combs and lay up stores for winter. But I feel confident that the source of the disease has been entirely removed, so that the effect must and will cease.

CAUTION NECESSARY.

It will be observed that I stated that there was no other colony nearer than 6 to 8 feet from the one I treated as described. Had there been, I would have closed the infected hive late at night when all the bees were inside, and removed it entirely beyond the range of the bees of the apiary, and then treated them. This I would deem necessary in order to prevent any of the bees, young or old, from entering any other hive carrying diseased honey with them.

I also deem it proper to state that I have made it a never failing rule to disinfect my hive-tool thoroughly after opening any of the infected hives of my apiary. I also thoroughly cleanse my hands after opening any diseased colony, and before opening another. To neglect this leaves a possibility for the disease to continue to lurk about the apiary, and it is in all probability due to some such neglect that leads some (but very few) to assume the ground that, treat foul brood as we may, it will appear again. And I will here state, that if such persons are really sincere in this belief, they stand in their own light as well as that of their fellow-bee-keepers, in keeping bees after they know their apiaries are infected. For an apiary infected by foul brood can not prove a source of profit to its owner, but, on the contrary, must result in loss to him, and serious loss to his neighbor bee-keeper, if not financial ruin.

In conclusion permit me to state that some seem to think it a hishonor to have foul brood among their bees. While I do not take this view of the case, I think it shameful and dishonorable, as well as intolerable, for any one to keep it, and thus favor leaving open the way to harboring and spreading the abomination and source of financial injury, for any one must be either shamefully ignorant or grossly dishonest to do so. But I sincerely hope we have no practical bee-keepers who assume such illogical, unreasonable, and untenable ground.

As to the matter of selecting a competent inspector of apiaries, the bee-keepers should formulate a law upon the subject, that none but persons well versed in the habits and management of bees can hold such a position. And as to the matter of judgment to be exercised upon the part of such officers in executing the law, I think there need be but little apprehension or fear, for all have the right to show that such officer is guilty of an abuse or maladministration of the law in case he unnecessarily destroys property that can be put to valuable use, together with the unnecessary destruction of bees, comb, honey, hives, and other appliances about an apiary. It should, however, be provided by law that there must not, and shall not, be any unnecessary delay about the matter of ridding an apiary of this ruinous pest. To begin to borrow trouble that is not in sight is equivalent to the fear of that 80-year-old bachelor who was seen weeping bitterly, and upon being questioned as to the cause of his grief, his reply was that he was thinking what a terrible affliction it would be after he was married and his oldest boy should fall in the fire and get burned to death!

Lyons, Kans.

Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

Mendleson's Big Honey Crop

Mr. M. H. Mendleson, of Ventura county, this State, has never been quite satisfied, I believe, with any crop he has yet harvested; there was always something to prevent its being just what it should have been. This year, if everything went right, he would have had a bumper crop, yet what he managed to secure is rather staggering to the average bee-keeper. I have learned from one of his helpers the past season that from his 800 colonies, he had something like 45 tons of honey. At the low price of 5 cents a pound, that would be $4,500—something not to be sneered at. If this crop were secured in the East where prices rule higher, the profit would be much better; then, again, it is likely that in the East he would not have so many off-years in which no honey is secured.

May Mendleson's harvest increase, and may his shadow never grow less.

Slick Shavers for Uncapping

A person who may be set down as something of a genius has brought out a simple uncapping knife that knocks all others silly. As it is drawn over the surface of the comb it does its work as beautifully as a keen razor does over the surface of well-lathered fat-man. I have not seen one of these slick shavers in operation, but I have been told they are just the thing. In short, the knife is a steam-heated one, and is kept so by being connected by means of a hose to a small boiler. The device complete, I am told, is but $5; cheap, indeed, and I must have one next year! I am told that many of them have been used in apiaries in the central portion of the State the past season.

Bee-Supply Trouble

The past season was another one of trials and tribulations to the bee-men hereabouts. There was no supply place nearer than Fresno, and those who tried to get anything from there say they are loath to try again. I, myself, got badly sold in the order I sent to the Central California dealers; nay, my laddie, "nare" again shall I venture thereabouts with an order. Later, I learned through Mr. F. Tainter, of Alemeda, that a firm in San Francisco decided rather late in the season to handle bee-supplies. I called over one day toward the end of the honey-flow to see how I could be fitted out in case I should want anything. This concern charged Fresno prices with the freight from that place to the Metropolis added; a cinch beyond doubt, for the San Francisco place had its goods laid down in its store just as cheap as they could be had delivered in the Raisin City, and I told them so. I believe that goods generally are sold cheaper in San Francisco than at any other place in California, except, perhaps, Los Angeles, for the reason the former city gets lower railroad rates owing to its being a seaport.

I was told further, at the store I refer to in the Metropolis, that I could not get any comb foundation by ordering it from certain makers in the East;

that they had decided to sell to no one on the coast, except to their agent at Seattle; that California bee-keepers would have to send to Seattle or get it from the sub-agent in San Francisco. That settled me; I can get all the foundation I want without buying from a manufacturer who is trying to put a fence about his goods in the interest of the few. Of course, I do not take much stock in this statement, and intended to write the foundation-maker and learn the truth of the matter, but other things of more importance to me prevented my doing so.

Here it might be well for me to remark that the "close" manufacturer is not connected with any bee-paper. There are not such great profits in bee-keeping that the apiarist can be cinched with impunity; off with the head of the dealer who will try "to do" you, ye cultivators in the noble art of tending bees.

Late Extracting of Honey

In years gone by I extracted before all the combs were fully sealed; of late years I have not done so. I am convinced the former practice was the better way for several reasons. To me the strongest reason is that you do not have to be constantly trying to circumvent a mighty army of robber-bees. 'Tis no fun to have such bees everlastingly poking their noses into every hive you open and into every lot of honey, comb or liquid, that you have to, of necessity, leave exposed for even ever so short a while.

Some will tell you that you get a much better honey by leaving it on the hive to the end of the season. I have not so found it; I have had just as excellent honey in quality and body, when I extracted it every few weeks as I have had by allowing it to remain until the end of July. Besides, you cannot keep the different grades of honey separate; you get a stiff, mixed-up conglomeration that has a sort of composite color and a bastard flavor. Some might like it; I surely don't.

Then the labor of it; you cannot work so fast or so nicely with the late, pasty honey. It won't uncap easily; it won't extract speedily; nearly half remains in the combs unless you give the combs a "Virginia Reel" that knocks the very life and usefulness out of them.

Then, too, you have a time of it getting the thick honey to pass through a strainer, or even to flow through faucet or from bucket. Such is the thick honey I have had to deal with. And if after all this trouble I could get a better price for it I might be somewhat compensated. But too often it has to be sold for less than the honey that is taken as the flowers bloom, and that is of fair consistency and delightful flavor and sparkling clearness. Besides, your crop is not so large, for by keeping the bees busy with frequent extracting you naturally, I might say, get a greater quantity, and that's what we are all after, so long as other things are equal.

It may be possible that bee-keepers in other localities may find it more to their interest to extract at the end of the season; if so, do so, but for me I find it otherwise, as stated.

Rather Doleful---the Honey Harvest

From several sources during June I learned that the crop in the southern portion of the State was not as good as it was expected to be at the commencement of the honey season. As heretofore stated, the early outlook was good; there was far above the average rainfall during January and February, but from the first week in March on there was practically not a drop of rain. All deep-rooted vegetation was able to make a good growth and yield plentifully of nectar. Where the nights and mornings were propitious, the bees were able to gather much, and, in fact, did store a fine crop of beautiful honey. But all places were not so favored. With me the yield has been a little above the average; remember, however, that this is not a honey section, and I do not present this general report to advertise our nectar-producing capabilities.

California Black Sage.

In passing I might well ask, Are we to have any more honey-years in California? But let's pause a moment and consider that in the grand old days of the '70's and early '80's the bee-men had full swing; Flora and Apiarist went everywhere, as it were, hand in hand; the flowers invited the bees to kiss them, and the hives groaned with the weight of the treasures thus acquired. But as the ranchman, orchardist, and a whole raft of other branches of agricultural pursuits came "sailing" o'er the valleys and climbing into canyons and up the mountain sides, the sweetness of Flora began to disappear, for she was trod upon, browsed upon, and worse, when not destroyed by fire, was uprooted by the plowshare. So, the coming of the cultivator into the bee-gardens of the great southland meant the going of the honey-flora and the busy bees to gather the same. Today for the sage-fields we have, as a substitute, alfalfa-fields, but these are not generally in the old haunts of our old-time honey-gatherers; they are more to the north. Where these fields exist a fair crop of honey is gathered even in the dryest of years; in fact, if I mistake not, there is a better chance of securing a crop of first-class honey in a dry year in these alfalfa-districts than there is in a wet one.

Honey as a Health-Food

This is a 16-page honey-pamphlet intended to help increase the demand for honey. The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last part is devoted to "Honey-Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed *free* at the bottom of front page on all orders for 100 or more copies. Send all orders to the office of the American Bee Journal.

Souvenir Bee Postal Cards

We have gotten up 4 Souvenir Postal Cards of interest to bee-keepers. No. 1 is a Teddy Bear card, with a stanza of rhyme, a straw bee-hive, a jar and section of honey, etc. It is quite sentimental. No. 2 has the words and music of the song, "The Bee-Keeper's Lullaby;" No. 3, the words and music of "Buckwheat Cakes and Honey;" and No. 4, the words and music of "The Humming of the Bees." We send these cards, postpaid, as follows: 4 cards for 10 cents, 10 cards for 20 cents; or 10 cards with the American Bee Journal one year for 80 cents. Send all orders to the office of the American Bee Journal,

American Bee Journal

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Late Swarms.

1. I have a colony of bees that have a bug similar to a roach. They run so fast that it is impossible to kill them. I have them in an old box-hive that is partly rotted. Is this the cause? What is the insect?

2. Should my late swarms not have enough stores for the winter, would it be a good idea to take a couple of frames from the others and put in them? and should I take them from the center or outside of the hive? INDIANA.

ANSWERS.—1. I don't know, but I don't believe it's anything you need feel uneasy about.

2. Yes; take them wherever you can find those that contain the most honey, and that will generally be toward the side. But don't rob Peter to pay Paul. Better let the weak ones starve than the strong ones.

Extracting Granulated Honey.

I am a beginner in bee-keeping. We have had a lot of honey-dew here. I have a lot of extracting supers on, and full. It is partly capped, and half of the honey in the cells is candied so that we can not extract it out. How can we get it out and save the combs?
ILLINOIS.

ANSWER.—Set the combs out where the bees can rob out the honey. When there is nothing left but the candied part, spray the combs with water, preferably hot, and spray again as often as the bees clean the combs out dry. That looks easy, but the trouble is that you must not do this at a time when the honey would be stored as surplus, and also when it would not be stored as winter stores, for honey-dew is not generally good for wintering. That leaves the best time in the early season when the bees can use up the honey in rearing brood.

Transferring in Winter—Price of Bees in Box-Hives.

1. Could I transfer bees from box-hives to the dovetailed hives in the winter if I did the work in a warm room and transferred comb and stores? I can not do it now as I am too busy.

2. What is a fair price for bees in box-hives, on an average? Some will be strong, some weak.

I have your "Forty Years Among the Bees," and think it great. WEST VIRGINIA.

ANSWERS.—1. Don't think of such a thing. Before you were half through the job you'd wish you never had seen a bee, and besides the work ought to be done at a time when bees are busy at work so as to patch up matters all right. A colony transferred in winter would be that much surer of being a dead colony before spring.

2. There is no rule about it. There may be places where the price would be $5.00, and others where they could be had for a dollar apiece. A colony in a box-hive ought to be as much less than one in a movable-frame hive as the cost of the latter hive and also enough to pay for transferring.

Swarm Troubles—Honey-Dew.

1. I could only get one swarm last year. The swarm issued June 26, and went up into a fork of a big limb. I brushed them off the best I could and brought them down. They went into the hive fine—all but a few. They kept going up the tree, and I brought them down 4 times; finally they all went back and left in 2 minutes. I would like to know how to prevent them from going up into the tree. I hear of a good many bee-keepers having the same trouble, and a great many bees going off without alighting at all. How can I make them settle?

2. The bees are all storing dark honey, and it has a strong flavor. No one seems to know what causes it, as we have lots of white clover, and also lots of rain. MISSOURI.

ANSWERS.—1. I don't think you need anything to make them settle. They always settle, even if it is up on a high tree. The thing is to make them *stay* settled after you have settled them in a hive. A swarm is always in an excited condition and produces a great deal of heat. Put it in a hive closely covered and with a small entrance and set the hive out in the broiling sun with nothing to shade it, and in their excited condition the bees find it quite too hot a place for them, and wisely conclude to leave, even if you put them back several times. So, if you want them to stay, the thing for you to do is just the reverse of what has been mentioned—do everything you can to keep them cool. Leave the cover partly off—an open space of at least half an inch, and an inch may be better—a big entrance below or the hive raised on blocks, and the hive shaded in some way, if only by an armful of long grass held down by 2 or 3 sticks of stove-wood. Of course, after the bees have got well established, say a week or less, there is no longer need of having things so open. Another thing that will make the bees stay, which is perhaps better than all other things combined, is to give the swarm a frame of brood. The bees feel then that they have too much of a start in housekeeping to desert.

2. The trouble may be honey-dew, and there is no remedy, unless it be to take off all surplus arrangements at the beginning and end of the honey-dew flow. Indeed it is the same if the dark honey comes from any other source.

Laying Workers—Rearing Queens.

As I am practising queen-rearing this season, I have a few questions that I would like to ask you.

1. What would be the proper step to make in a queen-rearing colony that has a laying worker, as they show a tendency not to take care of the queen-cells?

2. How does it come about that a black queen with yellow legs can be reared from a pure Italian colony?

3. When you rear queens, do you get as good queens from the cells as from a colony that has reared its own queen by swarming?
IOWA.

ANSWERS.—1. Generally the best thing to do with a colony that has laying workers is to break it up. But you can swap its frames with adhering bees for frames in a queenright colony or colonies.

2. Can she? I'm afraid there's some mistake about it.

3. Yes, if the cells are reared in strong colonies during a good flow.

Transferred Colony—Drone-Trap.

1. I am a beginner. Just today I took a colony of bees out of a grocery box and put them into a frame hive. I put in nearly all of the brood, which was a whole lot. I fastened it in with copper wire. It almost filled the hive. Will they swarm in 8 days?

2. I also have a drone-trap or swarm guard. I don't have any success with it. How should I use it, and why should I catch the drones?
NEBRASKA.

ANSWERS.—1. The fact of the bees having been transferred has nothing to do with their swarming, unless it be that the demoralization caused thereby may act somewhat as a hindrance to swarming. The bees will swarm exactly when they would have swarmed if they had not been transferred, or they may be hindered until a few days later, or hindered altogether.

2. A drone-trap attached to the entrance catches the drones as they attempt to leave the hive, when you can maltreat them in any way you wish. The intention generally is thus to suppress the drones of the poorer colonies leaving the chances in favor of having your virgin queens fertilized by drones from your best colonies. In the same way you may catch the queen of an issuing swarm, should one issue when you are not present, thus preventing the swarm from going off with the queen, and allowing you to remove the brood and leave the swarm with the queen. But this does not settle matters, for the bees may go on swarming so long as the queen is with them, and when a young queen emerges from her cell the bees will swarm again, and if the young queen is prevented from going out with a swarm she will also be prevented from going out to be fertilized, and then if she lays at all she will be a drone-layer.

Getting Started with Bees.

I have 3 colonies of yellow bees and one black colony, and they are all young swarms. They haven't much honey. I have frame-hives. Can I increase? and would I have to get an Italian queen to do so? What kind of a hive would I have to have? TEXAS.

ANSWER.—Depends upon circumstances. As they are swarms, and not old colonies, it is a little doubtful if you ought to think of increase this year. Still it is possible if the season is very good, and if the swarms are strong. You would get along a little faster to get a queen, but still the bees could rear their own queen. If the frame-hives you have are of a good kind, you better use the same kind for your increase.

It will be dollars in your pocket if you get a good bee-book.

An Escaped Queen.

I received a queen by mail, and used the cage for introducing her that she came in. At the end of 46 hours, having time and being very anxious, I looked into the hive to see about it. The bees had not yet liberated her. I thought from their actions that they were going to accept her readily, so I began to open the cage. I hardly began until out she came and flew away. What is likely to become of her? Should I have gone into the house to open the cage and secured the queen in my fingers before introducing her? MISSOURI.

ANSWER.—She would be somewhat likely to fly back to the hive where she had been, but still there are a good many unpleasant chances in a hundred that she may have been lost. Even if she flew back to the hive, there remains the chance that the bees might not receive her kindly. You should not have taken her out of the cage at all, neither in the house nor outdoors. Give the bees time to eat out the candy, and if you think best to hurry matters at all, dig out a little of the candy; but 46 hours is not a long time, and the queen will be more kindly received if she walks out of the cage while it is in the hive, and the hive not disturbed by you.

Queen Questions—Comb Honey Production—Swarming.

1. I have 2 colonies of bees, both very strong. On May 19, I divided colony No. 1, as described on page 27 of "A B C of Bee-Culture." On May 24, I examined them, and found 4 unsealed and 3 sealed queen-cells. I immediately separated them, but the old colony on the new stand seemed totally inactive, and the new one on the old stand, deficient in bees. Would you leave them apart and allow the queen-cells in the old hive hatch out? My other colony has also several sealed cells which I would like to preserve, as they are unusually large. How would it do to give colony No. 1 one of these cells?

2. I do not quite understand what is meant by a "ripe queen-cell." How do you distinguish a cell that has just been sealed up from one that is about to hatch? Do they not look precisely alike?

3. My queens' wings are clipped. Would it be better to allow one cell to hatch and the colony to swarm, then destroy the old queen and put the swarm back, letting them have the young queen? Or would you advise cutting out all the queen-cells? How would either plan affect the amount of surplus?

4. I have often been told that the average colony will store almost three times as much honey if one runs for extracted honey than in sections. Are you of the same opinion?

5. It seems to be difficult to get the bees started in the sections. From about 10 a. m. to 3 p. m., there are quite a few (probably a scant quart) in the supers, but they have not

as yet drawn out any foundation. (I gave them full sheets.) How can I get them started? Both colonies have their brood-frames full of honey and brood in all stages. I placed about 6 bait-combs in each super.

6. Would you advise me to prevent swarming if possible, or let the bees swarm naturally and put them back again? I can not keep more than 4 or 5 colonies. Ohio.

Answers.—1. You removed the upper story May 25, and the next day you found total inactivity on the new stand. Just exactly what you ought to expect, for the bees that left for the field would all return to the old location, none returning to the new place. You say there was a deficiency of bees at the old stand. All the bees would still be there that were there before, except the bees under 16 days old on the new stand. You would hardly gain anything by giving a cell to No. 1. It has now very little brood, and if you remove the old queen and give it a cell all egg-laying will cease for perhaps 2 weeks. If you give the cell without removing the queen, the bees will probably destroy the cell.

2. A queen-cell is called ripe when the young queen will emerge within a short time, perhaps 2 or 3 days. About this time the bees are likely to gnaw away the wax from the point of the cell. The nearer maturity the cell the deeper the pitting on its surface. Watch the difference in appearance as a cell grows older and you will recognize it better than from any description.

3. Your program is for the young queen to hatch, and then the colony to swarm with the old queen. The bees will not follow that program. The young queen will not emerge until a week or so after the colony swarms with the old queen. But you can come somewhat near to your proposed plan. Remove the old queen when the colony swarms, letting the swarm return, and destroy all cells at once. Then there ought to be no more swarming and the colony should devote its entire time to storing honey.

4. It is generally estimated that about 50 percent more extracted than comb honey can be obtained. Some set the figure higher, some lower.

5. With the bait-combs present the bees will probably store in the super as soon as the brood-chamber is filled, providing there is enough for them to store. If they are getting only enough for their daily needs, of course there can be no storing in sections.

6. It doesn't matter much which, only if you depend entirely on returning swarms you may have to return the swarm several times. Understand, however, that you can not stop swarming by merely returning the old queen, nor can you stop swarming by cutting out queen-cells, so long as the old queen remains. But if you return the swarm every time it issues, there will finally be only one young queen left, and then your troubles will be over for the season. If you listen each evening for piping, you will hear it a week or 10 days after the swarm issues with the old queen. Then the next morning destroy all queen-cells in the hive, and the young queen at liberty will be laying within about 10 days.

Honey-Dew—Unfavorable Year.

Under separate cover I send you a sample of honey that has puzzled me. Can you tell me where the bees got it, as they stored it after clover honey-flow, which is our only flow for surplus? The only bloom at this time was chestnut, of which there is a quantity, but I did not think that it produced much honey, or, at least, not such dark stuff. I also saw that they worked very much so very early in the morning for some time, but did not suspect that they were doing such dirty work as carrying such black stuff and mixing it with the nice clover honey. Later in the day they did not work so much.

Another thing I thought of, and that is honey-dew, but I do not know anything about it. I have been keeping bees only 3 years along with farming, so I have not the time to watch and study my bees as I might if it were the only work I had to do. I noticed on the leaves of the trees a shining, sticky stuff, but did not see any bees on it.

Do you think it is good to use as a food, and is it safe to feed to bees? Of course, if you taste of it you will find it a poor product. At least I do not want to eat it. I got about 100 pounds of the black stuff by uncapping the black only, then extract it, then extract the clear. Of course it will not be nice and clear any more, as some of the other will get in. The year in general was not so favorable as it might have been for a big crop. Pennsylvania.

Answer.—I'm not the best judge of honey in the world, not half as good as Editor York, but I have little hesitation in pronouncing your sample honey-dew. Chestnut doesn't grow here, so I've no personal acquaintance with it, but from what I have read I have an idea that it is a good yielder of fairly good honey. The bees may have got some good honey from the blossoms of the chestnut, and a larger amount of honey-dew from it. Honey-dew is all right to be used as human food if any one likes it. The trouble is that no one likes it, at least very few, but it is possible that some may like it. You know there is a wide difference in tastes. There is some fall honey whose taste is offensive to me, but I've known others to prefer it to the best clover honey. Some honey-dew, however, is said to be of good taste.

It is safe to feed it to bees in spring, to be used up in brood-rearing, but not for wintering.

Using Double T-Tins.

I notice in your reply to question No. 2 of a Pennsylvania gentleman, you state that you don't know of any remedy but to get better sections. I wonder if you have ever tried double T tins; that is, T tins on top to hold the sections down as well as underneath to hold them up. I have been using them this way for years and find them very efficient and practical, and with the addition of a 2-penny nail driven 1-3 of the way in (in the crease of the top T tins) to the side of the super, it makes a good, tough arrangement for practical handling, hauling to out-apiaries, etc. I use 4½x7-to-the-ft. sections scant, 28 to the ordinary 8-frame Langstroth. Possibly the way you make your supers the sides would not be heavy enough to hold nails. A smaller nail would do of course, but we like the 2-penny as we can handle them better. Colorado.

Answer.—Thanks for your suggestion, which would hold square the most refractory sections. I have never tried it, because I have never felt the need of it. Of course there would be a little objection because there would be more tendency to put propolis at the edges of the upper T-tins. The sides of my supers are ⅞, so there would be no trouble about using good-sized nails, and the longer the nail the more easily pulled out with the fingers. A slim nail 2 inches long ought to work well.

More Beginners' Questions.

I am a beginner in bee-keeping, and don't understand everything yet. I have 6 old colonies of bees in box-hives, and 6 in frame hives now, and will have the rest of them in as soon as they swarm, if I live and they do.

1. If I get an Italian queen that is tested from those who have pure Italian bees, and introduce her to black bees, will I get pure stock of bees from her?

2. How many times does a queen mate in her life?

3. Are there any bees that will work on red clover?

4. Are poplar and blackberry good honey-flowers? They are plentiful here.

5. My bees are black, and some are mixed with Italians. Bee-keepers never change queens here, for they keep almost all their bees in box-hives and my bees never were changed. I guess I have bees from 4 different places. Will that help any?

6. Can I keep 2 queens in one hive? Will that help to build up a weak colony?

7. Will it help my bees any to change frames of brood?

8. Will it pay me to buy queens for all my bees this year rather than to keep those I have?

9. What is the cause of a queen laying 2 or 3 eggs in one cell sometimes? Virginia.

Answers.—1. Yes, if you introduce her during the busy season, you will find the black bees will die off as they get old, and in something like 6 weeks there will be only Italians in the hive.

2. Once, as a rule, but rare cases of second mating have been reported.

3. Yes, and almost any bees will be found occasionally working on it.

4. Yes, but the word poplar is used for different trees in different places. What you call poplar in Virginia is probably *Liriodendron tulipifera*, which is also called tulip tree and whitewood. It is a good honey-tree, although the honey is dark, I think.

5. Yes, there may be advantage in getting bees from different sources, thus introducing fresh blood.

6. Ordinarily only one queen will be allowed in a hive, and a weak colony will build up just as rapidly with one as with a dozen.

7. No.

8. It may be as well to furnish new queens for only a part of your colonies. Then you can encourage the new blood in the increase.

9. It may be that the queen is faulty, if it happens in a strong colony; or it may be that she is a good queen in a weak colony with not enough bees to care for the eggs as fast as she lays them.

A Beginner's Questions.

1. What is the best kind of bees?

2. Is there any difference in eyes for bee-keepers? I heard brown eyes will affect bees. Is this true?

3. How can we get comb straight in the hive? Three combs are not straight.

4. How can we tell hybrids from black bees?

5. Can I keep Italian bees when there are no bees within 2 miles?

6. What is the best way to swarm bees?

7. Will bees bring just as much honey by dividing as by clipping the queen's wing? Minnesota.

Answers.—1. The general opinion is that Italians are best.

2. I don't believe there's any difference.

3. Use full sheets of worker-foundation.

4. Hybrids are generally a cross of blacks and Italians, and a hybrid of that kind has one or 2 yellow rings. However, in the first cross you may find some bees with 3 yellow bands and some with none, and the presence of these different kinds in one colony shows the hybrid blood.

5. There is some danger of mixing at that distance.

6. I suppose you mean what is called artificial swarming. What is best for one may not be best for another. Study what is said in your bee-book, and you can tell better than any one else what is best for you. If you haven't such a book it will be big money in your pocket to get one.

One of the easiest ways for a beginner is the following:

Take half the combs with adhering bees from hive A, and put them in hive B. Fill up each hive with empty combs or with frames filled with comb-foundation. Set the 2 hives side by side, and the queenless part will rear its own queen. You may leave them without doing anything further. Or, a week later you may look into the hives and you will find in one eggs and young brood in plenty, and in the other only advanced brood and some queen-cells. Take from the hive with young brood all the frames that have any sealed brood, and swap them for as many frames in the other hive with no brood at all. Now move the hive that has all the sealed brood and queen-cells to a new stand 10 feet or more away. That will throw all the field-force into the hive with the queen, and the colony in that hive will be in fine condition for surplus.

7. I don't understand your question, but you will likely get the largest amount of honey by keeping the whole force of a colony together if you can, without any dividing.

Bees Deserting Hive for Lack of Pollen.

Your answer to "Kentucky" in the May number induces me to give a little experience I have had in bees deserting their hives. A. I. Root in "A B C of Bee-Culture," says it is caused by the bees being weak and discouraged, pestered with ants, lack of stores, too much or too little ventilation, and I think some other causes. I have not the book by me. I would like to ask Mr. Root if he has positive proof that a colony ever deserted a hive for any one of those causes.

Some 35 or more years ago I was very anxious to increase my stock of bees, so in the fall after the honey season was over, which was very early in Eastern Nebraska, when the country was new and the climate very dry, I fed sugar syrup to induce breeding, and also in the spring, and one pleasant day in spring 2 colonies came out and went into other hives, and the next pleasant day others did the same thing, and this continued till my 17 colonies were reduced to probably 5 or 6. I do not remember exactly. This trouble ceased as soon as pollen commenced coming in. The deserting colonies were not very weak, were not pestered with ants, not too much nor too little ventilation, but on examination of the abandoned hives, I found in every case plenty of honey and brood in all stages, but not a particle of pollen, but the hives they entered always had pollen present.

I have no doubt that when those bees found themselves with a lot of brood and no pollen to feed them, they left their hives to go where there was some. How they should know where to go to find pollen is more than I can say, but they never made a mistake.

The conditions being as I found them in every case makes it evident to me that the lack of pollen was the cause of the trouble in my case, and without proof to the contrary, I believe all other cases of spring desertion are from the same cause. The stimulative feeding brought this about in my case. I have ever since been careful that they had plenty of pollen, and have had no more trouble.

Wyoming.

Answer.—This is an interesting matter, and it is possible that we have here the solution of the problem. It is, however, not impossible that desertions may come from other causes than the lack of pollen. But it is easy to believe that a lack of pollen would cause desertion. I had in former years not a few cases in which the bees left their hives with a good amount of brood and honey, but unfortunately I can not say whether or not pollen was present. I remember one case in which a colony did not start brood-rearing at all, after others did. I found it was without pollen, and gave it some, when it promptly began rearing brood. Mr. Root might say that even if lack of pollen be the cause of absconding in spring, he has included that among his causes under the head of "lack of stores," for pollen forms a very important part of the bees' stores.

It will be well if any who have cases of spring desertion will report whether pollen was present.

Preventing "Drifting" of Bees—Shipping Bees by the Car-Load.

1. What is the best plan to be adopted to prevent "drifting" when bees are unloaded from a car and take their first flight on their new location?

2. In loading bees on a car should they be set on the bottom of the car without any straw, or anything under them? These days it is found best in shipping comb honey in cases to set them directly on the car floor, and the most of the honey is shipped in that way. I thought it ought to work as well with colonies of bees as with cases of comb honey.

3. In loading colonies of bees on a car 2 tiers deep, would it be safe to staple a super on each hive in the first tier, before putting boards on top to receive the second tier? I have been told that any super or hive stapled on the first tier of hives would stand a chance to get misplaced on the journey by the jolting the car would get.

"Out West."

Answers.—1. I don't know. It's the first time I ever heard it hinted that bees were inclined to drift after a journey, although it may be common. In this locality to prevent drifting when bees take their first flight after being taken from the cellar, it is thought that giving quite a small entrance helps to prevent drifting. The same thing ought to work at any other time. As I think more about it, I very much doubt if bees are generally inclined to drift on their first flight after a journey, or more would be said about it. Besides, I've had much experience in hauling bees on a wagon, and never knew of any drifting after it; and it seems that hauling in cars would be the same.

2. They ought to carry all right with nothing under. It is common for a good car to have springs.

3. Stapling would need to be *very* secure. What would do for ordinary handling in an apiary wouldn't do at all for hauling on cars. The staples I use have legs 3-4 inch long, and for convenience in drawing out (although I don't very often draw them out) they are driven in only about 5-8, and occasionally one becomes loose in hauling. Driving in full depth would make quite a difference. A piece of tin or sheet-iron in place of a staple, with a 7-8 nail or two at each end, would hold more firmly.

Most Likely Honey-Dew.

1. I send you under separate cover a sample of honey which I have taken from my bees this week. What is wrong with it? We claim it is due to a little green insect that worked on the Norway maple leaves, on the under side along the ribs of the leaf. The droppings of these insects fell on the leaves like honey-dew and the bees gathered it. Some called it honey-dew, but it lasted about two weeks in succession. The bees worked on it after rains just as before, and it seemed the rains had no effect upon it as upon honey-dew.

In this section we do not have more than one or two "honey-dews" in a year, and sometimes as last year, we do not have any.

2. Have you had the same trouble? This is the first time that I have ever had, or heard of any one having honey like this, as far as I can remember. I asked an old man that had been in the bee-business some years ago, and he said that he did not have any such trouble.

3. Is that honey fit to use? We can't eat it. Is it saleable? What would you do if you had the same kind?

4. Chestnut season is about on, and I did not want them to mix it, so I took all the sections that were not capped, and extracted the honey from them, and put the empty comb back. Would you have done as I did, or what would you have done under like circumstances?

5. Would this honey do for the bees to winter on? My apiary is situated in town where there are a great many Norway maples, but the country people have the same experience.

Pennsylvania.

Answers.—1. The sample never came to hand. It makes very little difference, however, for from your description it is practically certain it is honey-dew, as honey is thus named that comes from the secretion of plant-lice.

2. One year I had quite a yield of it, and it may be some comfort to you to know that that was the only time in 48 years. Possibly you may come off as well.

3. It may do to feed after bees fly in spring, so it will be all used in rearing brood. It can be used for mechanical purposes, such as making printers' rolls. It could be made into vinegar, but I'm a little afraid of the flavor. If you can not eat it of course it is not fit for table use, and yet tastes differ so that it is possible some may like it. It is only proper to say, however, that some honey-dew is good to eat, and from plant-lice at that.

4. You did just the right thing.

5. It is possible that some honey-dew may be safe to winter bees, but I'd rather throw it away than to run the chance of trying to winter them on it, for honey-dew in general is unfit for wintering.

A Swarming Experience.

1. I have 6 colonies of bees. I had 3 swarms. One came out and went back; the other two I hived all right, set the hive under the swarms with the top off, and shook them in. Is this all right? Will they do as well this way as to let them in the entrance in front?

2. On June 23, I hived one swarm, set the old gum which the swarm came from on the other side of another bee-gum with bees in, and set the new swarm where the old one was. They flew from one gum to the other and on June 25, about 5 o'clock, they started to come out of the gum. That is, the new swarm. They had not done very much in the gum. They alighted on the gum that was between them sometimes before they swarmed the last time, and the bees would sting them to death. Was this what discouraged them? I put a spray pump to work, and it was not long before I had them coming back to the hive. They had not all gone out yet. It was thundering, and looked like rain at the time they started out (5 p. m.), so I set a hive in front of this swarm and undertook to smoke them out into it. They came out all right, but not in this empty hive. They went back to the hive that they came from; that is, where they were hatched. Please explain this to me as I am new in the business.

Indiana.

Answers.—1. Yes, your way is good when it is convenient. It doesn't make any difference how you get a swarm into a hive, just so you get it in.

2. It may be that the hive was too close and warm for them, and that June 25 was a very hot day. Perhaps also, the sun came upon the hive hotter about 5 o'clock. A swarm should have abundant ventilation, and should be shaded, if only by an armful of long grass on top of the hive held down by 2 or 3 sticks of stovewood.

Queen Quit Laying—Getting Brood-Comb Honey into the Sections—Banat Bees.

1. If not superseded by the bees, will a queen quit laying entirely? If so, what is the cause? This has been the case long enough for every cell of brood to be hatched out, and the queen is as large and looks as vigorous as any queen in the yard.

2. What is the cause after bees have swarmed and are hived on empty combs and full sheets of foundation with 2 supers on top, for them to fill the top super and then fill the brood-combs about 2-3 down to the bottom-bar and crowd the brood down to the lower third of the brood-combs and leave the lower super empty?

3. Is there any way to get this honey in the brood-combs into the sections? If so, give plan.

4. Would not the Banat bees be likely to be the best for this southern country? How are they in regard to temper and honey-gathering qualities?

Arkansas.

Answers.—1. I don't know, unless, as in the fall, all gathering has ceased. If the queen has stopped when brood-rearing is going on in other hives, she is no good.

2. The only thing I can think of is that the lower super is filled with objectionable sections, perhaps that were on the previous fall without being filled, and varnished over with propolis.

3. You can extract it. If the bees fill up with brood, that will crowd the honey out. It may not be a bad thing to have the honey in the brood-chamber.

4. Too little known about Banat bees to say.

Foul Brood from Dead Brood?

In your answer to my last letter you say, "But supposing it is a case of foul brood, that doesn't prove that foul brood could result from dead brood killed by the heat." Now that is where you are mistaken, for that is exactly what it does prove. I do not care how many sources of contagion there may have been within reach of my bees, the fact remains that the brood in their hives as well as the brood in the fourth hive was perfectly healthy and all right up to the time it was killed by the heat. You say it would be hard for me to be positive that no diseased colony was within a mile or two. No, I am not, and I care nothing about that at all. The fact remains that the brood in all 4 hives was all right up to the time the brood was killed by the heat in those 3 hives, and is still all right in the fourth hive. I know that just as much as you know a queen is a queen when you see one, instead of being a large worker-bee. I am not entirely green as regards bees, it being 32 years since I made their acquaintance, and 27 years or more since I read your writings in Gleanings. My father and I kept between 80 and 85 colonies for a number of years. Yes, I know that the authorities claim that foul brood can not be caused by rotten brood, but the authorities have said a good many things in times past that they afterwards found out weren't so. I do not think I ever had any brood killed by the heat before, although I have had combs break down in very warm weather. But those combs were not very old combs and had considerable honey in them.

The reason the bees did not clean out all the dead brood out of the combs before it rotted was because the weather was too hot day after day for 2 whole weeks. The hives were double-walled hives and did not cool readily at night. Besides, the nights were warm. There was a lot of dead brood to clean out, and more or less was capped over. If the brood I sent you was foul brood, then I know—whether the authorities do or not—that foul brood may be caused by dead brood killed by the heat.

Michigan.

Answer.—I don't pretend to know everything about bees, and certainly not about bee-diseases. Until very recently, all I know about foul brood is what I learned from others. I can only say that you are pretty much alone in your belief.

Weak Colonies—Requeening in Honey-Flow—Other Topics.

1. Why would it not be a good way to strengthen weak colonies to exchange places with a strong colony? I had a very strong colony. The bees were hanging out all over the hive. I gave them super-room and put the two on ½-inch blocks, giving them ventilation all around, but it seemed to do no good, so I placed it on the stand of a colony that had swarmed some time before and was small. I left it by the side of the swarm and moved it in a few days. It was very weak. I placed the weak colony on the stand of the strong one. They seemed astonished for some time, but next day they went to work with a vim, and are yet doing better than any other colony I have. And after a few days the strong colony seemed to have plenty of bees, and soon gave a super of honey. I tried it again on another colony. They seemed to fight for 2 days, and neither colony has done well since.

2. Will they usually fight when exchanged?
3. We have some honey coming in almost every day in the year. How long ought it to take a colony that has swarmed—treated as usual to prevent afterswarms—to build up again?
4. How many days after the swarm issues before the parent colony will have a laying queen?
5. Would you requeen during the honey-flow?
6. Do you lose much by changing queens?
7. How would it do to make a nucleus for each colony, rearing queens from the best queen, and when the queen is laying unite to the colony intended to requeen? How would I best do it? LOUISIANA.

ANSWERS.—1. As your experience goes to show, it is sometimes a good thing and sometimes not. In the first case the strong colony likely had a poor queen, and when given the weak colony with a young queen things looked different, and the fielders went to work with a will.

2. Generally there is no fighting if honey is yielding. Worse than fighting is the danger sometimes of a queen being killed. Generally, except in a case like the first mentioned, it is not advisable to strengthen a colony by making it exchange places with another.

3. Six weeks or less.

4. Not far from 3 weeks.

5. Yes, if enough is to be gained by it.

6. There is likely to be a little break in the laying.

7. It may work very well. The easiest way is to exchange two frames of the colony for two frames of the nucleus with queen and adhering bees, doing this during a honey-flow 2 or 3 days after unqueening the old colony.

Moving Bees 100 Yards—Afterswarms—Increase—Preparing Bees for Winter—Foul Brood Bulletin.

1. Between now and March, 1910, I have to move my bees about 100 yards from where they now are. When can I move them so as to have no bees go back to the old place?

2. In preventing afterswarms, by placing the young swarm on the old stand and taking the old colony to a new place, should all queen-cells except the ripest one be cut out at once?

3. Where there are several queen-cells in a hive all sealed up, how can I tell the ripest one?

4. I have 25 colonies of bees and want to increase to 50 next year and secure as much surplus honey as possible. How would you do this? We have plenty of white clover that begins blooming May 1, and blooms 2 months.

5. As I said before, I want one swarm from each colony. Now if I should give one super to each colony as soon as white clover begins blooming, and add empty supers by placing them under the one about two-thirds full, and keep adding supers as needed, will they swarm regardless of this room? Or will I have to give one or two supers and not add any more supers until they swarm? How would you manage this?

6. In preparing my bees for winter I am going to put the super cover on the honey-board over all brood-chambers. Will it be all right then to set an empty super over this cover, and put chaff in it, or should the hive cover be placed over this super and the super left off?

7. Where can I obtain a bulletin on foul brood, and what will be the cost of same? KENTUCKY.

ANSWERS.—1. Move them any time in winter or early spring at a time when they have had the longest confinement in the hives. Of course you will have to make a guess at that, and perhaps it will be, in your locality, soon after the middle of the winter.

2. That's one way. There's a better way. Set the swarm on the old stand, the old hive close beside it, without cutting out any queen-cells, and let stand for a week. Then move the old hive to a new stand, and the bees will do the rest. You see when the old hive is moved at that time all the field-bees will leave it and join the swarm. That will weaken the old colony, and added to that is the fact that no honey will be coming in, so the bees will conclude they can not afford to swarm, and all the extra queen-cells will be killed without your opening the hive.

3. You can't. You can make a guess at it by noting which seems to have the deepest pits on its surface.

4. There is perhaps no better way than to let each colony swarm once, treating it as described in answer No. 2. That will give a strong force to the swarm, which will do the principal storing, although the mother colony may store some if there is a late flow.

5. Adding supers will not stop their swarming. I wish it would. Still, along with other things it helps a little toward it.

6. Better do the first way mentioned.

7. From the office of the American Bee Journal you can get Dr. Howard's "Foul Brood," pamphlet describing the McEvoy treatment; also Kohnke's "Foul Brood" pamphlet. The former for 20 cents, or the latter for 10 cents. Both together for 25 cents.

A Beginner's Questions.

1. How long will it take bees to rear a queen from brood?
2. Why does a new swarm refuse to stay in a hive after they have been in one night? I had 3 swarms leave their hives so far this spring. I stopped 2 and put them in other hives and they stayed. The hives where they were hived first had full sheets of foundation, and lots of room. Why didn't they stay?
3. Would they try to leave if the queen's wings were clipped?
4. What is the best thing to do to stop a swarm that wants to leave?
5. Is a queen on the outside or inside of a swarm which is clustered on a limb?
6. Does an old colony cast more than one swarm in an ordinary season if they have plenty of room to work in?
7. Is the sumac good for the bees to work on?
8. If I do not cut the queen-cells out, will afterswarming go on, and must every queen-cell be cut out to prevent it?
9. When a swarm issues from a hive, does the queen go out first?
10. How can you tell when a queen is balled, and what should be done to her if balled?
11. Can you give me a good plan to melt wax on a stove or without a wax-extractor?
12. How long does basswood bloom last, and what time does it generally begin in Northern Iowa?
13. What time does the white clover bloom? IOWA.

ANSWERS.—1. If you give young brood to a queenless colony, you may expect a virgin queen to emerge in about 12 days; sometimes a day sooner, sometimes a day or more later.

2. Oftener than for any other reason, swarms desert because the hive is too close and hot. They might have stayed just the same if they had been put back in the same hive instead of a different hive.

3. Clipping the queen would make no difference.

4. Shade the hive, give abundance of ventilation, sprinkle the hive with water, and give the swarm a comb of brood.

5. She may be anywhere in the cluster, and sometimes the bees will cluster and the queen not with them at all.

6. Oftener than not, if left to itself, a colony will send out a second swarm about 8 days later than the prime swarm.

7. In some regions it is an important honey-plant.

8. If cells are left, the bees may swarm again, and they may not. If *all but one* be cut out, there will be no more swarming.

9. No; she may be among the last.

10. You can tell by seeing a bunch of bees perhaps as large as a hickorynut holding tight together. Throw the ball in a dish of water and the bees will leave her. Or, you may smoke the ball; but hold the smoker at a distance, for if *hot* smoke is thrown on the ball the bees will sting her.

11. Tear open one corner of a dripping-pan. Put in the pan the stuff to be melted, put the pan in the oven of the cook-stove, the inside corner the highest, and the open corner projecting outside (of course the oven-door is left open) so that the melted wax as it drops may be caught in a dish set to receive it.

12. It probably begins in Northern Iowa not far from the same time as here, somewhere in the first part of July, and lasts 10 days or so.

13. Somewhere in the first part of June, and may last 2 weeks or 2 months.

Some New Bee-Puzzles for Him.

1. About May 20, I transferred several colonies from box-hives to movable-frame. One, after remaining 4 or 5 days and sticking the combs in nicely, swarmed out, leaving their own brood in all stages.

2. June 10, I found queen-cells just started. Destroyed them, and 9 days later, after again destroying all queen-cells, I put the queen on frames with 2-inch starters below zinc. Two of the 8 colonies so treated swarmed before I visited them again 5 days later. The 2 which swarmed are on standard Hoffman frames. All the others on 5-inch frames.

3. June 23, I destroyed the first queen-cells found in the colony, took away all unsealed brood, giving frames of foundation. They were strong. They drew out the foundation beautifully and brought in about 10 pounds of honey, and swarmed out leaving a couple frames of compact, unsealed brood and less than a pint of bees—not a queen-cell—before I returned to them 4 or 5 days later.

4. Last Saturday (July 10), fearing lest a strong colony would swarm, I placed a zinc above an ordinary super, and set it under the hive—on the bottom-board, of course. I had no trap handy, and thought this would hold the queen till today—Monday. They have swarmed and are now queenless. Where *did* that queen go? "I don't know," and hardly expect any man to make an intelligent guess, but she is certainly gone.

I have handled bees only 5 or 6 seasons, and these are new puzzles to me. With the exception of a few well-behaved queens I recently bought in Ohio, I have only common blacks with a little yellow in their disposition.

If you can offer any hint as to where I "fizzled," I will be grateful. IOWA.

ANSWERS.—1. If conditions were as they were here, it would be entirely natural for them to swarm out from hunger, unless you had taken care to see that they were not out of provisions. In other words, it was a hunger-swarm. If they had plenty of honey and pollen, then I don't know where the "fizzle" was.

2. That's hardly out of the regular to have such exceptions. Hard to understand all about it, but one thing is that when bees get into a swarming fever, the longer time they are hindered, the more determined they seem to swarm. If you had treated them at first destroying of cells, instead of waiting another 9 days, there might have been no swarming. Sometimes the queen seems balky, just keeps on the bottom of the excluder trying to get up to the brood, and then the bees swarm. There might be some gain in putting in the lower story one of the poorest frames of brood.

3. Once a young fellow upon his examination was asked, "Where is Boston located?" "Boston—why, Boston—well, now, I know just as well as can be where Boston is located but I haven't the flow of language to express it." I know all about why those bees swarmed out, but I haven't the flow of language to express it!

4. Now look here, you keep asking questions that are harder and harder, and I'm not going to answer any more unless you ask something easier. But say, are you sure that queen did "go" at all? "You looked carefully and know she is not in the hive?" A queen in swarming trim is a great dodger, and you could easily miss her. Where and how she hides sometimes is a mystery to me. There is just a possibility that she went through some crack, or even through the excluder. A queen, in her frantic efforts to swarm, will sometimes go through an excluder that she would never think of going through to go up into a super.

Bee-Keeping in Georgia.

From all indications now, it seems that we are to have a very short honey crop in Georgia. I can not see any good reason for this. The winter was very mild, having only 2 or 3 small freezes.

I made what I call a reducer. That is, I cut out a hole in a board, one inch smaller than the inside measurement of a box-hive. I placed the board on one of my 8-frame hives (which contained one-inch starters) and set a box-hive on top of the board. These bees were about to swarm when I set them on the new hive. The result was that they never swarmed, but filled the 8 frames with comb and some honey. I got 20 pounds of honey from the top of the box-hive.

1. I intend to go there next spring near swarming time, remove the box-hive, and set it down close beside the 8-frame hive for a week. I will look for the queen in the new hive. If she is not present in the hive, I will know she is in the box-hive, and if I find queen-cells with eggs in them, I will let it go at that, and put on a super at once, but if I find no queen or eggs, then I will take from some other hive a frame that does have queen-cells with eggs, and give to them. What do you think of the plan?

2. I have 7 8-frame hives. The bees came out of box-hives and instead of letting them sit beside the box-hive for a week, I put them on a new stand as soon as hived, giving them a super with starters. The result is that I am going to get no surplus honey from them this year at all, but they have built some combs in the supers. You don't think I could expect to get any surplus from them the first year, managed that way, do you?

3. Tell me the easiest way for a beginner to make increase from 7 colonies to 21 or more,

and do it in such a way as not seriously to interfere with the honey-yield.

4. Isn't it a fact that black, or common, bees store just as good honey, and as much, as any other bees?

5. What time here in middle Georgia ought I to take off the supers?

6. I see in Danzenbaker's little booklet, "Facts About Bees," that he advises the use of only one super, taking out the filled sections from the middle and shifting the outside and partly filled ones to the center, refilling the outside ones with full sheets of foundation. He says that does away with bait-combs and keeps the bees hustling all the time. Do you like and advise this plan?

7. Why is it that you don't paint your hives?

8. Can you give me a few names and addresses of up-to-date bee-keepers in Georgia?

9. You do not seem to think Georgia much of a honey State. Why not? We have all kinds of flowers, but no buckwheat or clover.

GEORGIA.

ANSWERES.—1. Uncertain. If there are brood and bees in both hives, it may be all right. More likely there is brood in only one hive, with the chances in favor of the lower hive. If the brood is all in the lower hive, the bees will desert the upper hive when it is moved to a new place, if indeed there are any bees in the upper hive. If the brood is all in the upper hive, and it is set very close to the old stand, the bees may all cling to this hive, deserting the frame hive. Possibly, however, especially if the box-hive is set far enough away, the field-bees may come back to the frame hive, and may make a colony by your giving them a frame of brood.

2. If these were natural swarms, put on a new stand as soon as hived, there is no reason why they might not give some surplus in a good season. But if you got the bees into other hives without swarming, perhaps in the way mentioned in the previous question, then they hardly ought to be expected to do much, if anything, in supers, as all the field-bees would leave the new location and go back to the old one.

3. I don't know of any way. You can't have your cake and eat it, too; and it takes bees to make 2 new colonies. There is, however, one condition in which it is possible that you might increase from 1 to 3 and get as much honey as if you did not increase at all; possibly get more honey. That condition is a light flow in the fore part of the season and a heavy late flow, so late that all 3 colonies could build up strong for it. In that case it would not matter a great deal how the increase was made, the easiest way for a beginner being natural swarming. When the first swarm issues, hive it and set it in a new place, leaving the mother colony on the old stand. When the second swarm issues, set it on the old stand, moving the mother colony to a new stand.

4. No; at least very few believe so; if they did they would keep blacks and not Italians, and I don't know of any one in this country who has pure blacks and tries to keep them so. Mind you, however, I'm only speaking for this country. In Switzerland are some of the foremost bee-keepers in the world, and they keep pure blacks. Many in England also prefer blacks.

5. Whenever they are filled or nearly filled, up to the close of the season, or last honey-flow, and then all should come off.

6. It seems to me it would take too much time.

7. Following the teachings of G. M. Doolittle, in whose ideas I have great confidence, I think there is better chance for the moisture to dry out of unpainted hives than out of painted ones. I have seen a painted hive in my cellar damp and moldy when all the unpainted ones were in much better condition.

8. Just now Dr. J. P. H. Brown, of Augusta, is the only name I can recall. But there are others, and my memory for names is poor.

9. I'm not sure that I ever said Georgia was not a good State for honey. I have an idea it's pretty good.

Chunk Honey—Afterswarms—Different Length Frames.

1. I had 8 colonies of bees in the spring, 4 Italians and 4 hybrids, in 8-frame hives, and am trying to produce chunk honey in shallow extracting-frames. We had lots of honey-dew early in May so I put on a super of shallow frames with full sheets of foundation, and they were quickly occupied by the bees and the queen also rearing lots of drone-brood in them. I gave some of them 2 supers each, with the same result, and when they swarmed I gave the supers from the parent colony to the new swarm in about 3 days, having hived the new swarms on full sheets of foundation, the result being that every one of the supers was taken possession of by the queen at once, and still kept filling the supers with brood and drones, so I have hardly a single super that is clear of brood and pollen. I have never used queen-excluders on my hives. I am putting all new swarms into 10-frame hives. How can I avoid having brood in supers?

2. Will it do to put supers with brood in them on the new swarm when it is safely hived?

3. I have one swarm hived in a 10-frame hive with full sheets of wired foundation, giving them a new super, with full sheets of foundation (10 frames). They filled 6 frames in the brood-chamber with honey, brood and pollen, and went into the super and drew out the foundation, and the queen went right up into them and filled them with brood, leaving 4 frames in the brood-chamber not worked in at all, and about the same amount in the super. Why did they do this, and what is the remedy?

4. I wintered one colony in an 8-frame hive with super on, the honey in the super not being top capped over the middle of October. I left the super on the hive. Early in the spring I found brood in the super and none in the brood-chamber. So a little later on I changed places putting the super on the bottom and the brood-chamber on top, thinking to get the queen to establish her brood-nest in the brood-chamber. In about one week I put on an empty super with full sheets. The bees went to work in it at once. That queen, being high-minded, wouldn't stay below, so she promptly filled that super with young bees. I have an empty one under the top one, with the same result. Thinking she might be crowded for room, in a few days I gave another empty one on top. The bees (being about one million in number) succeeded in filling that one with honey before the queen could get to it. At this writing, the hive-body on top of the super at the bottom is crammed full of honey, the top-bar being bent or sagged and ruined, and not a vacant cell. What can I do with those brood-combs? I have no extractor.

5. When a colony is intending to send out an afterswarm and I hear the young queen piping in the hive, what can I do to prevent the swarm from issuing?

6. If I adopt the 10-frame hive and produce chunk honey, would you advise the use of queen-excluders?

7. I had 2 afterswarms come out on the same day—one (a black one) in the forenoon. In the afternoon one of my Italian colonies cast a small swarm. So I wished to unite them, and wanted to save the Italian queen, but not knowing how to get the black queen already hived, I just shook the Italians in front of the one already hived, hoping the Italian queen would be the victor. I watched to see the result. They went in all right, seeming to go in on the other side from the first swarm hived, and seemed to fight a little. In just a few minutes after the last swarm went in a large bee (I thought a drone) came flying close to my face. I tried to catch it with my hand, but failed, and it alighted among the other bees (Italians) at the entrance, and I saw it was the queen. She went right in among the bees, and around in front of the hive and crawled up the side of the hive, and took wing, flying only a short way from the hive. She did this about three times, only the last time she went out of my sight, being gone about one minute. She alighted on the board in front of the hive and went right in, but I never saw her any more. Each time she came out she went a little further. What do you think she was up to? Could it be that she was on a mating trip so soon after being hived? The bees seemed to pay no attention to her while she was flying in and out of the hive.

8. In buying my 10-frame hives this spring, I find that the frames will not go into my 8-frame hives. They are too long, and some of the shallow frames have wide top-bars and some have narrow top-bars. What are the advantages claimed for the brood-frames and different top-bars?

TENNESSEE.

ANSWERS.—1. The strange thing in the case is that with full sheets of foundation, which was no doubt worker-foundation, there should be drone-brood, unless it be that some of the foundation dropped down, and then the bees built in drone-comb. It is nothing very strange that bees go into extracting-supers, seeing that the frames there are the same as below. With old combs in the lower story there is not the same tendency for the queen to go above. You hived the swarms on foundation, and then put on a super that had been on the old hive. Of course the queen would prefer this super with comb already drawn out. The only way to prevent the queen going up is to use a queen-excluder.

2. Not unless you use an excluder. The queen will be sure to go up where the brood is if she can.

3. Bees are naturally inclined to cluster in a sphere, and when they had filled 6 frames in the lower story it was just as easy for them to enlarge by going upward as by going sidewise, the upper story having the advantage that it was warmer, as heat rises. If the lower story had been filled with old combs, there would have been less tendency to go up. The remedy is to have old combs below, which, however, is not so sure as an excluder.

4. Having no extractor, you can cut out the combs to be used as chunk honey, providing the comb is not too old and filled with pollen. If not fit for the table as it is, you can melt it, being sure not to overheat it, and when cold take off the cake of wax and use the honey for the table. You can give the sealed combs of honey to the bees for winter or spring.

5. Cut out *all* the queen-cells that are left.

6. Yes.

7. It would be nothing very unusual if she was on her wedding tour.

8. Some think that bees will build more brace-combs with narrow top-bars but all do not agree in that view.

Reports and Experiences

White Honey Crop a Failure.

The honey crop this year in this locality is a failure so far. We may get some honey from the fall flow.

J. H. McCARGO.

Danville, Ark., July 13.

Cold Rains—Little Honey.

The bees are not a success in this vicinity—too many cold rains. There is very little honey in sight at this time.

G. C. ALLINGER.

La Rue, Ohio, July 2.

Considerable Swarming.

We have considerable swarming in West Prowers and East Bent counties this season, and bees are just entering the supers.

JOHN S. SEMMENS.

Wiley, Colo., July 19.

Hardly Half a Honey Crop.

The honey crop in this locality is hardly one-half; there being no basswood to speak of, and clover is drying up on account of the drouth.

J. A. DOERR.

Viroqua, Wis., July 24.

Honey Prospects Better Than Ever.

Our honey prospects are better than ever this year, although the crop is late. There will be a fair crop of white honey, with perhaps a good supply of late, dark crop.

J. J. MEASER.

Hutchinson, Kans., July 19.

Weather Too Cool.

Clover is in full bloom, but owing to the cool weather the last few days, the bees have not done much in the supers. The basswood has lots of buds and promises well, though we want favorable weather to get a honey-flow.

MARY THEILMANN.

Theilman, Minn., July 6.

Too Dry and Hot.

The dry, hot weather put a stop to the flow of nectar beginning last week. The yield of white clover was less than half of last year—a super on every hive half finished.

Soaking rain today—too late for clover.

Basco, Ill., July 5. WM. FINDLAY.

An Enterprising Boy Bee-Keeper.

I am a boy 14 years old. I started a year ago with one colony of bees, and I wintered it through. This spring I bought another colony, and have managed to build up 3 colonies.

I will tell of a swarm that came to me in June. First a lot of bees were in carrying out comb foundation starters which I had for another swarm. They would carry out pieces of saw-dust and drop it in front of the hive. The next day it rained and they still stayed in the hive. The next day when my swarm issued I went to get that hive to hive them in, and there, to my surprise, was the swarm going in and out with comb and honey on their legs.

I am located in Kansas City, 7 miles from the post-office, and I live close to a golf club with 200 acres in clover and blue grass. As soon as I can get a photographer out, I will send you a picture of myself and my out-apiary.

All my hives are the Langstroth-Simplicity style. There is a great deal of timber around here, and I am going to hunt bee-trees. I would like to hear through the Americain Bee Journal how I can do it.

Kansas City, Mo. FRANK R. JOHNSON.

Best Time Ahead for Bees.

Bees don't do very well in this locality. There is no white clover this year, and other flowers appear to contain no nectar. We have just had 3 days of rain, so from now on there may be a good honey-flow, as sweet clover is commencing to bloom. As no honey is coming in there is hardly any swarming. But we are not giving up hope, as we have just ahead of us the best time for bees to store in the supers.

D. H. GATHMAN.

Forest City, Ill., July 6.

Flour Plan of Introducing Queens.

I will tell my experience in introducing a nice yellow queen. I thought I would try the flour plan, so I found the old queen, put her away, then waited a little while till everything got quiet. Then I lifted out a frame, dusted the flour on, holding or propping the frame in a slanting position, also dusting a little flour on the queen in the cage. Then I opened and let her out on the frame of bees. She walked a step or two, then jumped an inch or so, and then flew away. I reached out after her, touched her with my finger, but that was the last I saw of her until 3 days afterwards I opened the hive to see if they had started cells, and to my surprise I found a beautiful yellow queen walking about seemingly at home. I concluded she must be that queen. When I touched her with my finger in that desperate reach out for her, I must have knocked her down in front of the hive, and she went in the front entrance, and the bees accepted her at once. So I have decided to try the flour plan again. I may have a screen wire-cage about the size of the frame to place over her when I put her on the frame until I can slip the frame in place. R. E. HICKOK.

Christiansburg, Va., July 18.

Bees and Cucumber Growers.

It may be news to some of our bee-keepers to learn from Burton N. Gates, the expert in apiculture, that the 118 large growers of cucumbers in Massachusetts have found it imperative to the success of their enterprise to keep bees in their large conservatories to "set" or fructify the cucumbers raised in those huge glass houses. In all, about 1000 colonies are used for this purpose, and must be replenished yearly as the bees are severely exhausted by the work they do. Hence the necessity for continued demand for bees. The recorded sales of bees during 1908 was 1027 colonies, some of the larger growers requiring from 40 to 80 colonies for their forcing work. And they find that it is only by the help of the bees in fertilizing the bloom that they get from 10,000 bushels of cucumbers, and less, according to the extent of space at their command.

Their present consideration is how they may continue to use the bees with less loss than they have thus far suffered. Whether it is their confinement in a heated apartment, necessary to forcing the plants, or the want of more forage is not stated. Pity 'tis that so great sacrifice should be imposed on their well-doing.

Worcester, Mass., is the central point of this enterprise. DR. PEIRO.

Ravenswood, Chicago, Ill.

Weather Extremes—National Convention.

June was wet to the extreme up to the 20th, and then cooking hot up to July 3, since which it has rained every day or night, and frequently several times a day and night besides. No surplus honey is in sight as yet, and unless better weather comes very soon no honey will be shipped from this place. I haven't had even the sight, let alone a taste, of honey of this season's production. Such weather it has not been my misfortune to see before, and I hope I shall never be called upon to witness again. Discouragements have been on every hand, so far as the bees were concerned. Out of 200 last fall, 117 dead ones, is the record. Causes: Poor honey-flow previous fall, hence few young bees to begin the winter; cellar after March 1, left in care of new occupant and ventilator openings nailed up; (incubator in cellar-room adjoining, and other irritants); next, horrible weather to move bees by rail, and delay by railroad in moving to destination; and a continuance of cold, windy, and cloudy weather during the latter half of April and all of May. And June was wet up to the 20th, and it is only a wonder how so many survived as did.

Like most bee-keepers, we are yet hopeful that the weather will make a change, and let us gather a normal crop at least, for I want to go to the National Convention at Sioux City, with a smile, and not a little puny one at that, but a big, broad one, right out loud. I hope to see this convention rival any other held by the National, and that is hoping for a good deal; and while the prospects for a crop of honey are very discouraging just now, I trust at least something will be gathered from this on through the season. F. W. HALL.

Storm Lake, Iowa, July 19.

Good Prospects for Honey.

Bees are doing fine. They have stored considerable from the first crop of alfalfa, and are working on sweet clover now. It has been wet here and the nectar was thin. I have 3 or 4 supers on some hives, a number of which are filled, but none sealed. Prospects are good.

LOUIS MACEY.

North Platte, Nebr., July 20.

Alsike and Basswood.

Bees are doing well on alsike clover, but as the farmers are now cutting the same it will soon end. But as basswood will open about July 5 to 7, the break in the nectar-flow will not be noticeable if the weather proves good during the basswood bloom.

G. M. DOOLITTLE.

Borodino, N. Y., July 2.

A Little Hope for Honey.

Bees don't seem to work on white clover this year, and have not more than started in the supers. There is plenty of sweet clover and smartweed, so there is a little hope for some honey. Most of the colonies are in fine condition. MRS. AUG. JOSEPHSON.

Granville, Ill., July 12.

A "Young" Bee-Keeper.

I am young in the bee-business—only 3 years old. But I find it very interesting and instructive. I have 41 colonies in 10-frame hives; all doing well. Some are at work in the third super. I have the swarm control well in hand, not having had a swarm this year so far.

Sterling, Kans., July 12. E. E. POTTER.

No White Honey This Year.

We have had a lively season, but the honey is just awful. It is black as the darkest molasses, being almost exclusively honey-dew.

The prospect for a fall crop is good, but our clover crop is entirely jeopardized by this honey-dew, and we will have no white honey this year. C. P. DADANT.

Hamilton, Ill., July 10.

Prospects for Fair Crop.

We have 1150 colonies of bees here. The first and second blooms of alfalfa are over, but there are three more blooming periods coming, and although up to this date the honey-flow has been slow, the prospects are good for a fair crop.

The clean, bright American Bee Journal is always a welcome visitor here. I am proud to be able to place such wholesome literature in the hands of my family. GEO. H. REA.

Mesilla Park, N. Mex., July 5.

Some Swarming Comments.

Some of the advice given on page 206 seems a little difficult of application. When dividing by hive-stories, we are told that the original brood-chamber "should be set up on a new and preferably remote stand in order to retain what old bees it happens to contain." In this locality if set in the most remote corner of the apiary just as many old bees would return as if it were moved only a few feet. Even at 4 miles, C. P. Dadant says some bees return.

On the next page, under the head of shaken swarms, it is advised to have frames containing nothing but narrow starters, while the super contains sections with full sheets of foundation, or better still drawn sections. In 9 cases out of 10—probably 10 cases out of 10—the queen would be certain to go up into the super, and it would be well filled with brood; at least that is what happens here. Of course an excluder would prevent that, but nothing is said about any excluder, and naturally one supposes it is not to be used.

With those narrow starters in the brood-chamber we are told good worker-combs will always be built, if a young queen of the current year's rearing be in the colony. That seems to take it for granted that it is an easy thing to have such queens on hand in time for shaking swarms, which must be at least a little in advance of natural swarming. Such a thing is hardly practicable here, at least it is a difficult thing to have *good* queens reared so early.

In the concluding paragraph it is said to be essential to the highest success to requeen every honey colony with a queen of the current year's rearing, "as early in the spring as possible." Now if some beginner in this vicinity, anxious for the highest success, goes to work and rears young queens so as to requeen in April or May, he would have a lot of queens mostly worthless, if indeed his colonies did not swarm with queens reared thus early. Even supposing he requeens late enough to have good queens, he would hardly attain the highest success by requeening every colony according to the teachings of those who say that for best success we should breed from the best. For if each colony is requeened there is no way of telling which queen is best, because the force of bees that gathers the harvest will not all be the progeny of the queen left in the hive, but part of them will be the progeny of the removed queen. PROGRESSIVE.

Too Wet for Honey.

There has been abundance of bloom but too wet for honey, and now linden bloom has passed and white and alsike clover are nearly gone; sweet clover is not plentiful enough to yield honey, but we will have lots of fall flowers with the second crop of alsike, from which we may get a good fall flow. Bees have swarmed considerably, and are in fairly good condition now. Comb honey is worth 15 cents a pound in the market for No. 1, and 12½ cents for No. 2. O. P. MILLER.

Menlo, Iowa, July 20.

Hard Spring for Bees.

I have been a steady subscriber to the American Bee Journal for 25 years. Last fall I put 32 colonies of bees in the cellar; 30 of them came out in good condition last April. This has been a hard spring and summer for bees, and I do not anticipate much of a honey crop. Last year I had over 1300 pounds of saleable honey. GEORGE GALE.

Greenville, Mich.

Hot and Dry Weather.

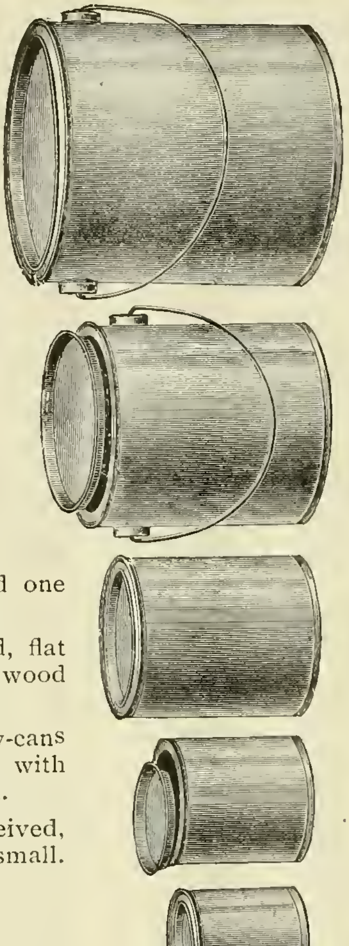
The hot weather has nearly stopped all nectar-secretion. It has not rained of any account for 3 weeks; mercury at 93 in the shade today with a scorching sun and high wind just burning vegetation. Basswood bloom is just opening and if a change can come, we may yet have completed the sections nicely started from alsike clover. G. M. DOOLITTLE.

Borodino, N. Y., July 12.

Beginning with Bees.

The American Bee Journal came and was a real pleasure—a true feast of good things. Although the snow covered the ground, yet your pages brought the promise of spring. I had just skimmed over the tempting array, marking for future perusal the more important to my case when the May allowance appeared. Although its contents may be just as good, yet as I received it from the office it reminded me so much of withered flowers that it was perhaps less appreciated.

It was my privilege to attend the October meeting of the State and National Associations in Detroit, and from the encouragement so generously given, have ventured in the line, beginning with a colony that had put their former patron on his back for several days, and were only awaiting favorable moment for going up in fire and smoke. At my request they were sent to me last January. After a week on the way and a distance of 150 miles they landed here on a mild day. With full knowledge of the last doings I made bold at once to open the hive-entrance. Then, like Mr. Spectator, gracefully retreated. Fully a double handful rushed out, but as I survived that venture, little at a time I got out the spikes from the cover and have cleaned off the entrance-board,



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and up to date I have received only 4 or 5 stings. I believe from indications that I have a strong colony, composed of 2-banded Italians with a sprinkling of blacks, which thus far have done the stinging. With the first showing of fine weather they were out and back laden with pollen. The brood-frames are so thoroughly glued in that I can not as yet separate them. About two weeks ago I put on a super of sections which they are working on. I have a new hive on the stand with brood-frames and foundation in place, and thinking from indications that they might swarm, I put on a queen-trap.

I am new at this line, but already have great regard for the insects, yea, almost a love for them, having quite a library on the subject, which I have read and read again, yet I feel helpless when some new feature arises.

I am looking forward to the coming of the next number of the American Bee Journal, because every page seems not a page of print but alive with people asking and giving experiences.

This is a great fruit place and few bee-keepers, so we are talking bees on every occasion, because we delight in it. J. W. Greene.

Lowell, Mich., June 9.

A Non-swarming Process.

Our bees came through the winter in fair condition except a few that had their honey taken pretty close last fall. My crop of honey last year was fine, therefore I took it very close, and I would have lost 40 colonies out of 70 if I had not fed. But by close attention and feeding often, I lost only 8. I now have 78 colonies, all of which I think will be honey-gatherers, for the sourwood honey-flow which comes about June 25 and lasts till August 1, or about 20 days. This is the only honey-flow we have of any value excepting for brood-rearing. My bees are very strong at this writing. Although I have 78 colonies, I haven't had a single swarm issue.

Possibly there are some of the younger bee-keepers that would like to know something about my non-swarming process. I say "younger bee-keepers," for I think there are several who have a lesser number of colonies than I have and they have a great many more swarms than I do.

My process is simple. We will say that all of our bees have good queens; the majority of these queens will swarm or fix to. So I begin to make a round to each yard about every 8 days. The first queen-cell I find with an egg I mash, and take that comb out and set it in a nucleus, which we all have at this season of year. I put an empty comb in its place, and if it hasn't an empty super full of combs, I go to the honey-house and get one and place on it. They all get this process that show signs of swarming, as above stated. Do not put in a frame of foundation to prevent swarming, for it won't do. Bees dearly love to start queen-cells on fresh drawn comb. So I always use old combs as long as I have them.

We are having an abundance of rain in this country, which makes it bad on the bees. But it is going to make a fine display of sourwood bloom.

I scan the pages of the good old American Bee Journal closely, and certainly do enjoy reading it. I wish it could come to my desk every week. Geo. F. Jones.

Elkin, N. C., June 3.

Bees and the Cactus.

On page 209, is an article by Mr. Otto Sueltenfuss, San Antonio, Tex., about cactus blooms being destructive to the bees. I had no opportunity to study the case before, because this is my first year with bees, but I am interested in natural history, and this is what I have found out about those plants:

The blossoms are *sensitive*. If you put the end of your finger on the top of the stamens, they close up immediately by curving towards the center. That brings the pollen in contact with the insect, insuring fertilization and sometimes keeping the insect prisoner among the stamens. I have often found dead insects in the closed flower.

The observation at nearly sunset is correct. The flowers close up in the evening. The bee has been gathering nectar there in the daytime, but when she comes back for more in the evening, the stamens are curved in and she can not get at the nectar. That is probably what makes the bees act in a frenzied manner, as intoxicated.

I will study more about it this summer and will report if I find something interesting to the bee-man. R. OLIVEREAU.

La Bonte, Wyo., June 27.

Very Rainy Weather.

This is rather discouraging weather for the bees, or rather for the bee-keeper, in this part of the country. This is the sixth day we have not had an hour of bright sunshine, and this morning it is raining in torrents, so in all this time the bees have scarcely had a bit of honey. Fruit-bloom did them little good, as it was wet nearly all the time. White clover is plentiful, but if this kind of weather keeps up that will do them little good also, although regardless of the cloudy weather the bees are storing a little honey in the supers, sealing some of the section and extracting combs.

I had my first swarm May 10. I had 3 swarms the other day in one pile. Yesterday I had a swarm hive itself in an empty hive I had set out ready for use.

I wonder if everybody is having as much rain as we are. CHAS. DOAN.

Hull, Iowa, July 9.

A New Honey-Spoon.

Over in England they have a handy new honey-spoon—or at least a device in its handle that will prevent it from getting down into the jar of honey on the dining table, thus avoiding sticky fingers and spoilt table-cloths. It is a very ingenious contrivance, and should have a large sale among honey-consumers, especially bee-keepers. It is well plated on high-class nickel. We have secured some of these very unique spoons, and will mail them at 90 cents each. Or, we will send a spoon and the American Bee Journal one year—both for $1.50. It would make a fine gift.

"The Honey-Money Stories"

This is a 64-page and cover booklet 5¾ by 8½ inches in size. Printed on enameled paper. It contains a variety of short, bright stories, mixed with facts and interesting items about honey and its use. It has 31 half-tone pictures, mostly of apiaries or apiarian scenes. It has 3 bee-songs, namely: "The Hum of the Bees in the Apple-Tree Bloom," "Buckwheat Cakes and Honey," and "The Bee-Keeper's Lullaby." It ought to be in the hands of every one not familiar with the food value of honey. Its object is to create a larger demand for honey. It is sent postpaid for 25 cents, but we will mail a single copy as a sample for 15 cents, 5 copies for 60 cents, or 10 copies for $1.00. A copy with the American Bee Journal one year—both for 80 cents. Send all orders to George W. York & Co., Chicago, Ill.

Books for Bee-Keepers

Every bee-keeper should have a bee-book besides a bee-paper. On another page will be found all the best books offered—either at a price, postpaid, or as a premium. If you can not earn them as premiums for getting new subscriptions, it will pay you well to purchase one or more of them. You will find them of great value. There are so many things in the books that are needful to know, and that of course could not be told over and over again in the bee-papers. If a bee-keeper can afford only one, it would better be the book rather than the paper. But now that the American Bee Journal is only 75 cents a year, of course, no bee-keeper, however limited his apiary may be, can afford to be without its monthly visits.

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Nuclei, without queens: 1-frame, $2.50; 2-frame, $3.50; 3-frame, $4.50. 1 Full Colony, 8-frame, $9.00.

Select the queen wanted and add to the above prices.

NOTE

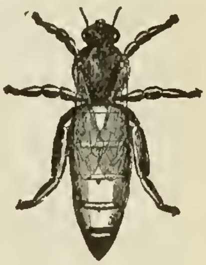
I have transferred to my son, Benj. G. Davis, my straight 5-band and Golden department, and in order to receive the promptest attention, all correspondence for these should be sent direct to him. He practically grew up in my queen yards, rears queens by my methods, has had charge of this department for years, and understands his business.

Prices same as above except Breeders, which are $4.00 to $10.00. No disease.

JOHN M. DAVIS, Spring Hill, Tennessee, U. S. A.

DOOLITTLE'S

"Scientific Queen-Rearing"



This is G. M. Doolittle's master-piece on rearing the best of queens in perfect accord with Nature's way. It is for the amateur and the veteran in bee-keeping. The A. I. Root Co., who ought to know, say this about Doolittle's queen-rearing book:

"It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of modern methods of rearing queens wholesale."

Mr. Doolittle's book also gives his method of producing comb honey, and the care of same; his management of swarming, weak colonies, etc. It is a book of 126 pages, and is mailed at the following prices: Bound in cloth, $1.00; bound in leatherette, 75 cents.

Special Clubbing Offer

We offer a cloth-bound copy of this book with the American Bee Journal one year—both for $1.40; or a copy of the leatherette-bound edition, with the American Bee Journal one year—both for $1.15. The cloth-bound book given free for getting 3 new subscribers at 75c each; or the leatherette-bound copy given for 2 new subscribers.

Every bee-keeper should have a copy of Mr. Doolittle's book, as he is one of the standard authorities of the world on the subject of queen-rearing and everything else connected with bee-keeping and honey-production.

George W. York & Co., Chicago, Ill.

National Bee-Keepers' Association

Sioux City, Sept. 22-23, 1909

Be sure your tickets to the Convention read via

THE NORTH-WESTERN LINE

Fast through train service daily from Chicago, Milwaukee, Cedar Rapids, Des Moines, Kansas City, St. Paul and Minneapolis, and all points West and Northwest.

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W. B. Kniskern, P. T. M.,
Chicago & North Western Ry.,
Chicago, Ill.

Standard Breed

Queens from Our Superior Golden Stock

Untested, 1 for $1.00; 6, $5.00; 12, $9.00. None superior to our queens, and but few equals.

Mr. F. Danzenbaker, the inventor of the 20th Century Smoker, wrote us March 5, 1908, that he has a good opinion of our strain of Italian bees:

If they are as good as the one Mr. L. L. Brockwell, of Edlow, Va., sent me to exhibit at Jamestown Exposition. I didn't get her until Sept. 19th, on a single frame in an observatory hive. Her bees stored and capped 9 lbs. of honey in ready-built combs of 4x5 sections in two weeks or 9 working days, as 5 days of that time were rainy or too cool for bees to fly. If it had been a 10-frame colony they surely would have gathered 60 lbs. or more. I offered Mr. Brockwell $10 and 4 young queens in May, but he declined. I then asked him if he would let me have her for $25; he said no. I would have given that for her to breed from. I then asked if he would sell her for $50. He said no, but that I could have eggs from her in May. So you see what we both think of her for a breeder.

Very truly, F. DANZENBAKER.
Norfork, Va.

Big discount on large orders. No disease. Write for list.

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for fall delivery. Bred from specially selected imported mothers. Select untested queens, mated from Caucasian yard, splendid honey-gatherers, $1 each; five for $4. Imported queens $4 each. 8A2t

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How about that old, played-out Queen? Now is the time to replace her, or make increase. Try the famous BANATS and CARNIOLANS. 75 cts each; $8.00 per doz.

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of
Moore's Strain of Italians

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the BEE-KEEPERS' REVIEW, Flint, Mich., says: "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queens are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

I Am Now Filling Orders

By RETURN MAIL

—PRICES—

Untested queens, $1.00 each; six, $5.00; doz., $9.00. Select untested, $1.25 each; six, $6.00; doz., $11. Select tested, $2.00. Extra select tested, $3.00. Breeders, $10.00.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address, 7Atf

J. P. MOORE, Queen-Breeder,
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QUEENS BY RETURN MAIL

Italian
Carniolan
Caucasian

Tested, each.....	$1.00	Doz.......	$10.00
Warranted.......	.65	"	7.00
Virgins............	.25	"	2.50

Choice Breeding Queens, Each, $2.00

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Doolittle & Clark

are now sending out choice ITALIAN QUEENS at the following prices: Untested, $1.00 each; 3, $2.50; 12, $9.00. Tested, $2.00 each; 3, $5.00; 12, $18.00. Breeders, $2.50, $5.00, $10.00. 5Atf

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FREE OFFER

NOT CHEAP QUEENS, BUT QUEENS CHEAP.

Reared from the best selected red-clover mothers. My queens are all reared by the bees, as they far better understand the job than I. I use no artificial plan. All queens large and well developed, such as will, with proper management, fill an ordinary hive full of eggs and brood in ten days.

Directions for building up weak colonies with my queens, 10c.

Prices of Extra Selected Three-Band Bees and Queens.

Untested queens	1,	$ 75 :	6,	$ 4.20
Tested "	1,	1.00 :	6,	5.70
Breeder	1,	5.00 :	3,	12.00
1-frame nucleus with untested q'n.	1,	1.75 ;	6,	10.20
3-frame nucleus with untested q'n.	1,	2.25 ;	6,	13.20
1-frame nucleus with tested queen.	1,	2.00 ;	6,	11.70
2-frame nucleus with tested queen.	1,	2.50 ;	6,	14.70
Full colonies, untested queen				4.75
Full colonies, tested queen				5.00

Prices of Extra Selected Five-Band or Golden Italian Queens.

Untested queens	1,	$ 1.00 ;	6,	$ 5.70
Tested "	1,	1.50 ;	6,	8.70
Breeder	1,	10.00 ;	3,	24.00

If queens are wanted in large quantity, write for price list. 3Atf

W. J. LITTLEFIELD, Little Rock, Ark., Rt 3.

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ITALIAN QUEENS

As honey-gatherers, I will put my strain up against any other strain or race of bees in the world. None but Select Queens are sent out, and if not well pleased with Queen after two years, I will refund money and 50 cents for your trouble. I guarantee my bees to work on first and second bloom of red clover. Queens, untested, $1.00 each; 6, $5.00; 12, $9.00. Every Queen warranted purely mated.

W. M. Parrish, Lawrence, Kan.

COVERT, KAN., Sept. 12, 1907.

W. M. PARRISH, Lawrence, Kan.

Dear Sir: The queen I received of you in 1906 yielded, this year, twice as much surplus as any other one colony I have.

CLARENCE A. HALL.

CHOICE QUEENS

Golden—Red Clover—Italians—and Gray Carniolans

	1	6	12
Untested Queens	0.75	4.00	7.50
Tested	1.00	5.50	10.00

Breeders, $3.00 to $4.00 each. 5Atf

CHAS. KOEPPEN, Fredericksburg, Va.

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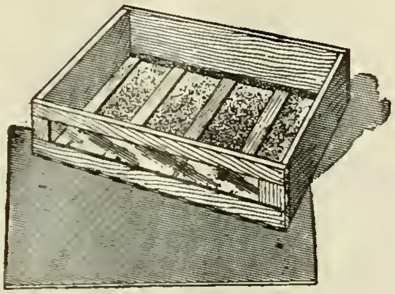

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of fine white basswood with one-piece cover and bottom. Can furnish with either corrugated paper or "no drip sticks."

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are made for any number or size of sections with either 2 or 3 inch glass front.

We have a large stock on hand which means prompt shipment, and our prices are lowest.

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for shipping or storing extracted honey prevents leakage and taint from wood; being square they are extra strong and economize space. 1-gal. cans 10 in a box; 5-gal. cans 1 or 2 in a box. Send for our estimate for 1909.

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Revised by Dadant—Latest Edition

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ARE LOCATED AT

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Black Diamond Brand Honey, and honey-packages of all descriptions. Their office is at the same address, and here they are fitted to receive bee-keepers or their orders, entertaining the one and handling the other with a service that cannot be surpassed. If you are interested in bees, live in New England, and have not their catalog and circulars, drop them a postal. You will be well repaid. 5A6t

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That is, Naturalized Italian Bees, and acclimated to Northern Latitudes. No better bees on the face of the earth. Send postal for price-list. Address, 6A4t

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For Sale

Untested, 75c each. Reared from imported queens. Price-list free. 5A7t

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Untested, 75c; tested, $1.00. Two-frame nuclei with untested queen, $2.50; with tested queen, $2.75. 8A1t

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Fine Golden Italian Queens
at 50c each 7A2t
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CYPRIAN, Carniolan, Caucasian, Italian Queens Select untested, $1.00. Select tested, $2.00. Bees $8 colony. Supplies and Honey. 6A1y
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J. E. HAND will begin the season of 1909 with improved facilities for rearing the

CHOICEST QUEENS

He has developed a system of queen-rearing that contains all the best points of other methods with none of the defects, including some **valuable improvements** of his own—in short, a system through which the highest queen development is reached by **correct** and **scientific** principles, which means that he is now in position to offer to the bee-keeping public a **higher grade of queens than is usually offered in the common utility classes,** owing to scientific methods which produce queens of a higher development than can be reared by the ordinary methods in vogue, and also to an **improved method of classifying queens** which strikes the word **select** from our list, and gives a **square deal to all.** No selects means no culls, and the highest grade of queens in the untested and tested classes. These queens will be reared from a superior strain of hardy Northern-bred **red clover Italians,** "the very best," and will be safely delivered to any address in the United States, Cuba, Canada or Mexico, at the following prices; Untested, $1.25: 3, $3.00. Warranted, $1.50: 3, $4.00. Tested, $2.00: 3, $5.00. Special prices on large orders. Valuable information free. Send for it to-day.

J. E. HAND, BIRMINGHAM, OHIO, ERIE CO.

QUEENS
Of High Quality

Our queens are reared by the most **approved methods** by a **queen specialist** of 30 years' experience.

We breed the **Leather-Colored, Red Clover,** and **Golden Italians.**

We solicit the trade of all bee-keepers wishing to secure a **hardy, prolific race** of Italians, whose **honey-getting qualities** have been proven **superior.**

Select untested.....	$ .75	½ doz.	$4.00	1 doz.	$ 7.50
Tested..............	1.00	" "	5.50	" "	10.00
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Queens by return mail. Prices for large quantities on application. Circular free.

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By return mail. If not satisfactory leave in Post-Office. Write for special prices on Bees and Supplies.

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with illustrated lessons on Cutting and Dressmaking, **FREE,** and I will sell you all the patterns you want for five cts. each. They are the same patterns you have always paid 10c & 15c for at the stores, made by the same people, and correct in every detail.

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Extra-good leather-colored Italian queens, 70c; 6 for $3.75; doz., $6.50; 20 or more, 50c each. Properly reared. No disease. Satisfaction guaranteed. 11Atf

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Among
the Bees

40 Years
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THIS book of over 340 pages tells just how Dr. Miller manages his apiaries to produce the most honey, which, in turn, brings the most money. Dr. Miller has been "at it" some 45 years, and so is competent to tell others the best way to be successful with bees. In 1903 his crop of comb honey was over 18,000 pounds, and he is not located in the best honey-producing part of the United States, either——Northwestern Illinois.

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40 Years
Among
the Bees

40 Years
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the Bees

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is a new book by A. A. Brigham, Ph. D. It contains no fool theories, no crazy systems—just common-sense. It starts with the mating of the stock birds and the setting of the eggs, and carries the reader straight through to the mature fowl. One chapter for each month—80 pages; fully illustrated. Price, 50c with a year's subscription to "Poultry Husbandry."

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If you want to improve your bees you should try at least ½ doz. of our famous long-tongued Italian Red Clover Queens, bred for business only. Will guarantee them to be equal to the very best queens bred in the U. S. Have been a queen-breeder for 20 years. Untested queens, after May 10, 75 cts each; ½ doz., $4.00. Tested, $1.25 each; ½ doz., $7.00. Nuclei and full colonies in the season. Send for free catalog o. Bees and Queens. 4Atf

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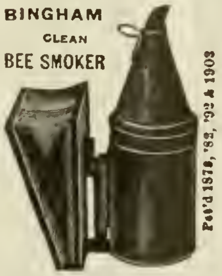

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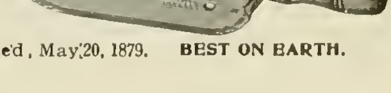

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Cuts up scrap bones easily and quickly—no trouble. Feed your hens fresh cut green bone daily and get more eggs. Send for catalogue.

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Italian Bees for Sale

1 colony, $5 ; 2 for $9 ; 5 for $20. Queens—Untested, 75c each ; 6 for $4 ; Tested, $1 each ; 6 for $5. Will put swarms into any style hive to suit purchaser. 5Atf

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FRIEND BEE-KEEPER—We are prepared to fill your orders for **Sections.** A large stock on hand. Also a **Full Line of Bee-Supplies.** **We make prompt shipments.**

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Italian Queens—hustlers. Untested, 60c; Select, 75c; Tested, $1.25. 8A2t

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Golden Italians
Caucasians
Carniolans

	1	6	12
Untested	$0.75	$4.25	$ 8.00
Select Untested	1.00	5.50	10.00

Tested, $1.50; Select Tested, $2.00

We have in charge of this department MR. LESLIE MARTIN, formerly queen-breeder in the Apiary of the U. S. Dept. of Agriculture, Washington, D. C.

Send for our free catolog of "Falcon" Bee-Keepers' Supplies.

W. T. FALCONER MFG. CO.
Jamestown, N. Y.

Honey and Beeswax

CHICAGO, July 20.—Not any comb honey on this market of the yield of 1909 at this date, and if there were any it would not sell. There is often a little call during the latter part of August. To say what price it will bring at that time would be a guess. Extracted is being offered freely at about 7c for white, and 6 for amber. Beeswax, 30c.
R. A. BURNETT & CO.

LOS ANGELES, Aug. 2.—Water whte extracted, 6½c; white, 6c. Light amber, 5¾c. Comb water-white, 16c; No. 1 fancy, 15c; fancy light amber, 14c; No 1 light amber, 12½c. About one-half a normal crop.
H. J. MERCER.

ZANESVILLE, OHIO, July 20.—There is now a good demand for honey. For No. 1 to fancy white clover comb the jobbing trade would pay 14@15c delivered here, and for best extracted 8@8½c. It is too early for the market to be established, but better grades are selling a little higher than at time of last quotations, say 16@17c. Off grades, 12½@13c. For clean beeswax I offer 29c cash, or 32c in exchange for merchandise.
EDMUND W. PEIRCE.

INDIANAPOLIS, Aug. 2.—There is a good demand for best grades of honey. For fancy white comb, producers are being paid 16c. For No. 1 white, 14c. Finest extracted in 5-gallon cans, 8c. No demand for amber or off-grades. Producers of beeswax are receiving 28@30c. WALTER S. POUDER.

CINCINNATI, July 20.—The market is bare of fancy white comb honey. We have a fine extracted table honey selling at 8c. Amber honey in barrels is selling at 6@6½c, according to quantity. We are paying 28c cash and 30c in trade for beeswax delivered here.
C. H. W. WEBER & CO.

KANSAS CITY, MO. July 20.—The demand for comb honey is quite active, the very best stock moving freely at $3.25 per case of 24 sections, amber and No. 2 honey selling at $2.75 per case. Extracted, best white, selling at 6½@7c, with fair demand. The supply of new comb honey is somewhat limited as yet, but we look for new arrivals soon.
C. C. CLEMONS PRODUCE CO.

Headquarters for Bee-Supplies

ROOT'S GOODS

At Root's Factory Prices

Honey Wanted!

If it is Extracted Honey, mail us sample and quote us lowest price; if it is Comb Honey, state what kind it is and how it is put up. We are **always** in the market for honey.

Give us a trial on **Red Clover** and **Golden Yellow Italian Queens.** Ours cannot be excelled.

C. H. W. WEBER CINCINNATI ...OHIO...
Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

BOSTON, July 30.—Fancy white comb honey, 15@16c; No. 1, 14@15c. White, extracted, 9c. Beeswax, 30c. BLAKE, LEE CO.

TOLEDO, Aug. 5.—There is practically very little demand for comb honey as yet, and very little being offered. We look for prices to be about the same os last year. New crop fancy white clover would perhaps bring 15@16c in a small way; No. 1, 14@15. Extracted, white clover, in barrels or cans, would be worth 7@7½c; amber, extracted, 6@6½c. Beeswax is quite firm at 28c cash, or 30c in trade. THE GRIGGS BROS. CO.

HONEY AND BEESWAX

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We offer many premiums in this number for the work of getting new subscribers for the American Bee Journal. We request every reader to help us increase the list of regular subscribers. It is not our aim to make more bee-keepers, but to make better bee-keepers of those who now are in the business. Surely this is right. Why not get your neighbor bee-keepers to take the American Bee Journal? It will pay you in more ways than one to do such missionary work. We not only pay you for it, but you will thus be helping to inform the bee-keepers around you how to conduct bee-keeping in the proper way; how to keep their bees free from disease; how not to spoil the honey market for you and themselves; how—but there are so many ways in which they would be helped by reading the American Bee Journal every month. And the cost is so small—only 75 cents for a whole year—about 6 cents a month. We will be glad to furnish free all the sample copies you can use judiciously. Why not begin now?

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of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for

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Have you a good bee-book? Many bee-keepers do not have. And that is where they make a big mistake. A bee-paper cannot take the place of a good bee-book. The paper is a splendid thing to read *in connection with the book.* On another page we make some generous clubbing offers of bee-books with the American Bee Journal.

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That depends on whose name it is. It depends on what the name represents. It depends on the quality of the goods the name represents. It is **not** the name that makes DADANT'S FOUNDATION so well known and well liked, but it is the

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That's what backs up the name, and the **quality** is backed by 30 years of successful experience in foundation making.

EVERY INCH of DADANT'S FOUNDATION is equal to the best inch we can make. Do not fail to insist on Dadant's make when you order your foundation. Accept no substitute even though the dealer claims that his foundation is made by the same process.

It is the PURIFYING PROCESS that counts. Our method of purifying has been unequaled for years. This method leaves every essential in the pure beeswax, and our Foundation does not have the odor of wax cleansed with acids.

That is why several large honey-producers who have tested our foundation side by side with other makes, have found ours to be the best, and the best liked by the bees.

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AMERICAN BEE JOURNAL

SEPTEMBER, 1909

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THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
146 W. Superior St., Chicago, Ill.

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THE SUBSCRIPTION PRICE of this Journal is 75 cents a year, in the United States of America, (except Chicago, where it is $1.00), and Mexico; in Canada 85 cents; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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2d.—To protect and defend its members in their awful rights.

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Prices for balance of season of 1909: One Queen, 75 cents; 2 for $1.40; 3 for $2.00; 6 for $3.75; 12 for $7.00. Superior Tested Breeding Queens, $2.00 each—well worth $3.00.

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Nemaha, Co., Kan., July 15, 1905.

⁂

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Marion Co., Ill., July 13.

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31-1f

American Bee Journal

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Prices of Queens after July 1	1	6	12
Select queens	$ 75	$ 4 00	$ 7 00
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Young queens from our improved stock are the best security against poor seasons. Requeen now and have bursting strong colonies in the spring. We employ 500 colonies. Queens sent outside of United States or Canada, 25 cts. extra.

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Italian Bees

Queens and Nuclei

Choice Home-bred and Imported Stock. All Queens Reared in Full Colonies.

Prices for July to November:

One Untested Queen	$0.75
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One Select Tested Queen	1.10
One Breeder Queen	1.65
One Comb Nucleus—no Queen	.80

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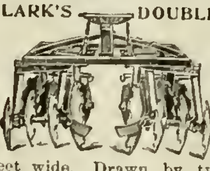

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Mr. N. L. Stevens, president of New York Bee-Keepers' Society, Moravia, N. Y., who purchased of me in 1907, 46 of my cheapest untested queens, writes Jan. 22, 1909: "The queens I purchased of you in 1907 proved very satisfactory. I bought over 300 queens that season from 10 different breeders, and your bees averaged the best of any of them the past season, and only one strain was a close competitor. Your bees built up very rapidly, and were good honey-gatherers."

Why pay a high price for the common kind when others report such results? If you don't try a few of my queens we shall both lose money. Untested queens, 60 cts. each; select untested, 75 cts.; tested, $1.00; fine breeding queens, $2.00 to $5.00. Safe arrival and satisfaction guaranteed. 7A4t

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Superior Italian Queens

By return mail after June 1st or your money back. Bred from best **Red Clover** working strains in U. S. No better hustlers, gentle, and winter excellent. Untested, from my three-banded **Superior Breeder**—1, $1.00; 6, $5.00; 12, $9.00; after July 1st, 1, 75c; 6, $4.00; 12, $7.50. Special price on 50 or more.

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One Untested Queen	$ .60
Six Untested Queens	3.00
One Tested Queen	.85
Six Tested Queens	4.50

Safe arrival guarranteed. 7Atf

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Celluloid Queen-Buttons

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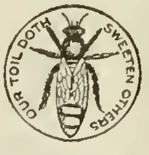
NOTE.—One bee-keeper writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of these buttons], as it will cause people to ask questions about the busy bee, and many a conversation thus started wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."


OUR TOIL DOTH SWEETEN OTHERS

The picture shown above is a reproduction of a motto queen-button that we offer to bee-keepers. It has a pin on the underside to fasten it.

PRICES—by mail—1 for 6 cts.; 2 for 10 cts.; or 6 for 25 cts. Address,

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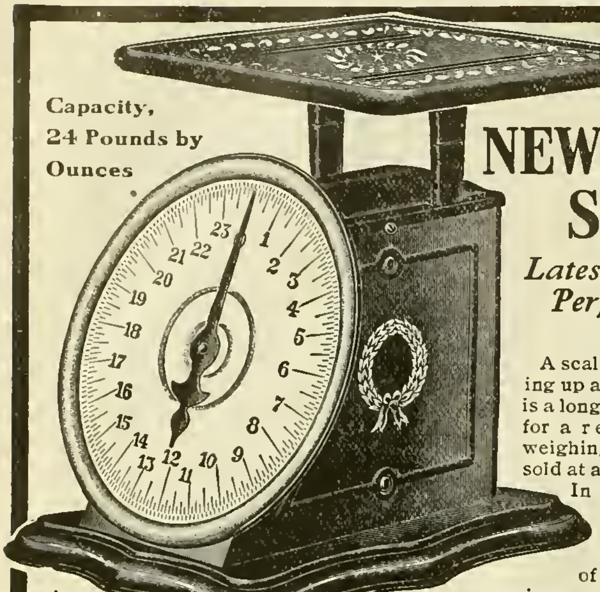

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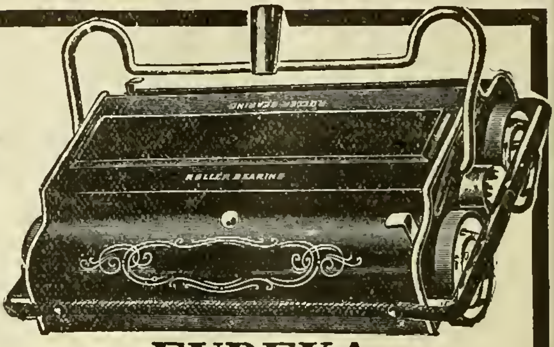

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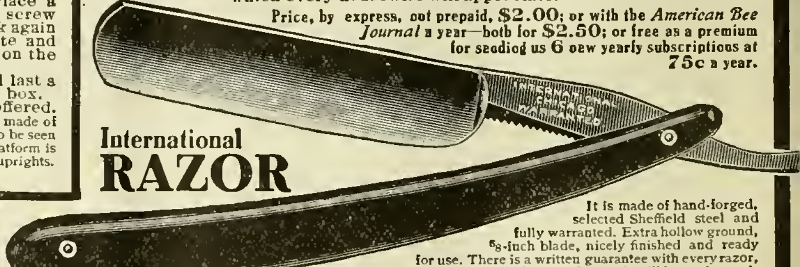

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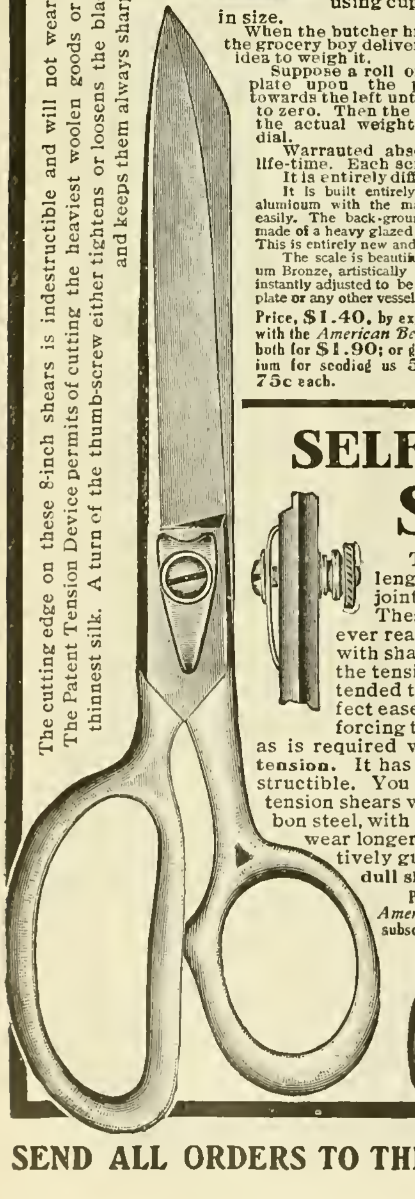

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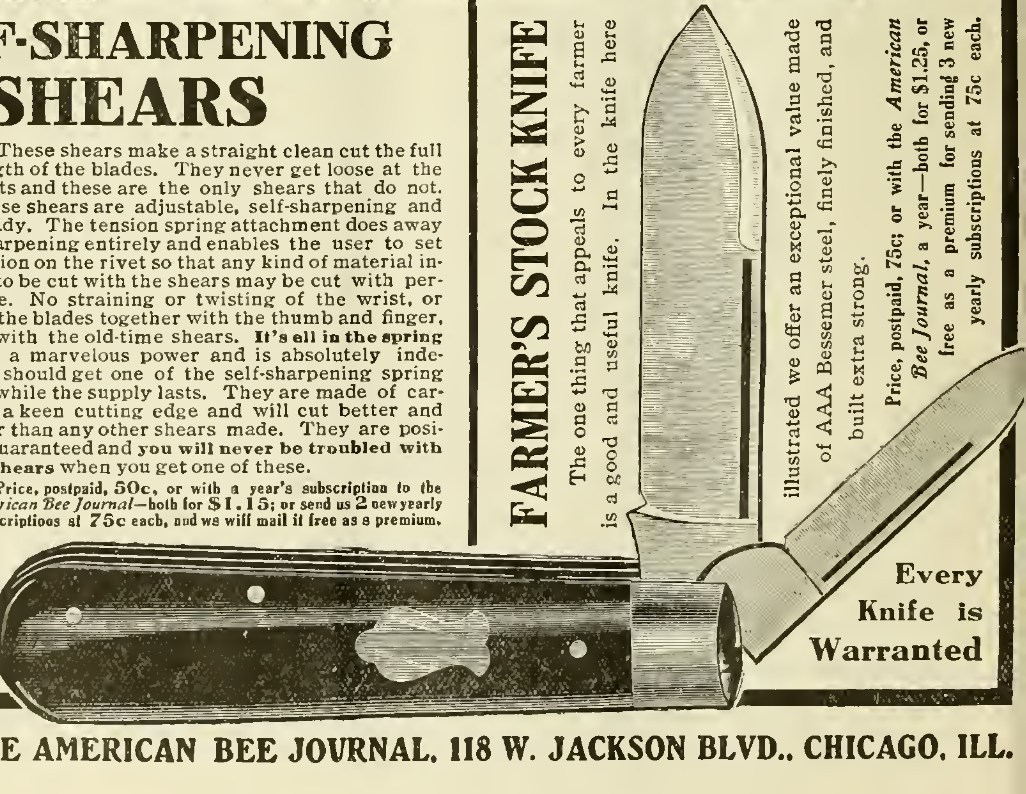

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AMERICAN BEE JOURNAL

L.L. LANGSTROTH
CHAS. DADANT

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Editorial Notes and Comments

Raising the Price of Honey

If you are dissatisfied with the price you are getting for your honey and would like to know what you can do to get more, please put it down as a general rule that the first move toward raising the price is to raise the quality. If some careless bee-keeper sells to your grocer or your private customer, honey that is only half ripened, at a price 2 cents below what you are asking, don't drop your price to meet him, but redouble your effort to produce an article so superior that your customers cannot fail to note the difference—even call their attention to its superiority. Persistency in that line will surely bring its reward, and in time you will find that people will be clamoring for *your* honey in preference to that of any one else.

◆

Getting the Sections and Combs Cleaned Out

When the season closes, whether it be in July or September, sections should at once be taken off. If left on longer, the bees may do no little damage by daubing glue over the combs, and sometimes gnawing the foundation. Then comes what is for many the troublesome part, getting the bees to clean out the sections that contain only a little honey.

There are two ways to accomplish this, that seem diametrically opposite—each good in its place. The Miller plan is to pile the supers out-of-doors, where the bees can have access to them, but to have them covered up, and allow an entrance for only one or two bees at a time. The B. Taylor plan is to let every super be exposed to the fullest extent. Which of the plans is to be used depends upon the number of supers as compared with the number of colonies. If there are as many supers as colonies—possibly if half as many supers as colonies—then the Taylor plan is all right. If the number of supers is less than stated, then the Taylor plan would result in having the combs torn, and the smaller the number of sections the worse they will be torn. The Miller plan is the thing for a small number.

Extracting-combs may be cleaned up on the hives—not an easy thing to do with sections—but it is much easier to set them out fully exposed to the bees. Unless the combs are new, they will be little torn, even if the number be small.

◆

Get New Queens Now

Next spring a number of bee-keepers will be asking about getting new queens for the sake of improving their stock. If they are wise, they will not wait till spring, but act *now*. Not that their getting new stock will make any very great difference this year, but the new queen or queens will be in place ready to do business on good time next year. There is more than one good reason for this. In the spring a queen can be had only by paying an extra price, for if it be got early it will be one that has been wintered over. If not kept over winter, it is not likely to be of the best quality, for experienced bee-keepers say that queens reared very early are likely to turn out very poor.

It sounds a little paradoxical, but it is true all the same, that the best queens are the cheapest. That is, from the same breeder you will get queens reared at this time of year, or a little earlier, for less money than you can get queens from him very early next year; and queens reared during the honey-flow come in the natural time for queen-rearing, and so average better. Queens are introduced more safely now, while honey is coming in, than in the spring before there is any flow. An important item is that a queen introduced now will be in full working order from the very start next spring, ready to breed from as soon as the season is sufficiently advanced.

So you see there is very good ground for taking time by the forelock and ordering queens now instead of waiting till next spring. A good way is to buy several untested queens. You then stand a chance to get in the lot what will prove a choice tested queen.

◆

Multiplication of the Foul Brood Bacilli

We are told that one reason why foul brood is such a dreadful scourge is that the little plants that are called bacilli increase so very rapidly. Each bacillus, in half an hour, will divide into two. Well, a potato can be divided into a good deal more than two. But not every half hour. In half an hour a bacillus will become 2, and in an hour it will be 4. A half hour later there will be 8, and in 2 hours from the beginning there will be 16. Surely not a formidable number, but just keep that up, doubling every half hour, and in 6 hours you will have 4000. That begins to look like something. In 12 hours, 16,000,000, and in 21 hours, 256,000,000,000,000.

Perhaps it is not best to pursue the painful subject any farther.

◆

Use of Young Brood

It is a common practice with many to give a frame of brood to a newly-hived swarm. Such a swarm, if put into an unshaded hive in the broiling sun, with little chance for ventilation, is very likely to desert the hive, while a fully established colony under precisely the same conditions will have no thought of absconding. The established colony cannot afford to leave its valuable possessions, while the swarm, having as yet only an empty hive, wisely concludes it will do well to secure a more comfortable place before it makes any start at housekeeping. So a frame of brood is given to the swarm, that it too may feel there will be too much of a loss to think of establishing new quarters. Of course there is no excuse for neglecting to have the swarm as cool and comfortable as possible, but even then it sometimes happens that a swarm will desert.

Some have said that the giving of brood has had the very opposite effect; but this hardly agrees with general experience.

As to giving young brood to a nucleus with a virgin queen, there is not so much unity of sentiment. In fact, there is a distinct divergence of views. Some say that when a frame of brood is given to such a nucleus, the bees at once proceed to start queen-cells, and kill the virgin. Others say that the feeding of the young brood has a stimulating effect upon the bees, and indirectly upon the queen, hastening the date of her mating and laying. Also that the presence of brood prevents the whole of the little colony from going bodily with the virgin on her wedding-trip, in some cases never to return. It is true that after a prime swarm has issued, the virgin in the mother-colony is mated and begins laying without the presence of unsealed brood, but it is also true that in normal cases of supersedure both eggs and brood may be found in abundance during the entire virginity of the young queen, since the old queen continues her work until the advent of the young one, and often for some time after.

Giving young brood also helps to determine as to the presence of the virgin. After she attains a certain age she is very shy and hard to find. Give a frame of young brood, and if the bees do not start queen-cells you may count that there is a queen in the hive. But the converse is not always true, for sometimes the bees will start cells with a virgin present, only to be destroyed a little later on. If in doubt as to whether the practice is good or bad with you, it may be well for you to try giving the brood.

Starting Bees in Sections

Now and again there is a complaint that bees are slow to begin work in a super of sections. Some make a practise of giving first an extracting super, so as to get the bees in the habit of working above the brood-chamber. E. D. Townsend has extracting frames and sections in the same super. John Silver (Irish Bee Journal) says to put on, fairly early, frames not more than 2 or 3 inches deep, and later raise these and put sections under. Others use a bait-section in the middle of the super; that is, a section that had been filled, or partly filled, the previous year, and then cleaned out by the bees. All of these plans, it will be noticed, depend upon the fact that bees are slow to begin work in a super containing nothing but foundation, but will promptly begin work in drawn-out comb above, as soon as the brood-chamber is filled.

Which of the different plans it is best to use depends upon circumstances. If one has a good market for a sufficient amount of extracted honey, then the first 3 plans are advisable, the full extracting-super for the largest quantity, and the Silver plan for a very small quantity. But if one has a poor market for extracted, and a good market for comb honey, then it seems hardly advisable to use any plan that yields even a small quantity of extracted honey. The honey that goes into the extracting-supers may as well go into sections. The bees accept the bait-section as readily as an extracting-comb. To them it is merely an extracting-comb on a small scale. And having begun on the bait, they will not fail to expand the work into the surrounding sections, if the flow warrants it.

Get Bait-Sections Ready for 1910

Now is the time to get ready your bait-sections for next year, if indeed you have not already done so. Plan to have at least one bait-section for each of the first supers given, even if you have to use some sections that have been filled.

There will be probably some supers in which the bees have worked very little; perhaps a little honey in a good many of the sections, only the central sections being much drawn out. When taken off at the close of the harvest, and cleaned out by the bees, such a super will give the bees a fine start at the next harvest.

But you will no doubt have a good many sections that are about half filled, and which you will have emptied by the bees. One of these in the center of a super of sections will start the bees to storing in the super if they have anything to store.

The Isle of Wight Bee-Disease

The Isle of Wight is a long ways from here, and we may feel no interest in any disease there except the common feeling of interest among all bee-keepers; yet there is a possibility that the strange disease may by some means reach even to this distance. So it may be well to keep somewhat informed. It really begins to look now as if the disease might be more fatal than American and European foul brood combined. Only one colony has survived of the strain of bees which were in the island before the outbreak, and John Silver is rearing queens from that in hopes it may be to an extent resistant to the disease. It seems that the many colonies that have been sent to the island have sooner or later succumbed, and Mr. Silver gives the following rather discouraging outlook, in the British Bee Journal:

> Mr. Cooper, who long hesitated between two opinions, has finally come to the conclusion that the disease is infectious, and further, that when once a colony is affected, although it may temporarily recover, do what one may, it will eventually succumb. He has considerable doubts regarding the eventual fate of the colonies sent to the island, and states that his experience shows that when they have been about 18 months in the island they go wrong.

Give Honey a Fair Show

When a woman who is out of salt comes into a grocery, it will make no difference with her purchase if salt is displayed. She wants salt, and she will ask for salt, whether it be in sight or not. So with flour, coffee, and a great many other articles in common use.

With honey the case is different. In many cases—perhaps in most cases—the customer who buys honey did not enter the store with the intention of buying it, but did so *because tempted by the sight of honey on display*. And that sort of temptation is good for people. But the trouble is that most grocers, if left to themselves, will not keep honey *continuously* on display. It must be the effort of the bee-keeper to get them to do so.

Wesley C. Foster, in the Bee-Keepers' Review, in urging this matter, gives in illustration a case where a difference in display made a difference of nearly 4 to 1 in the amount of honey sold:

> One grocer that I had persuaded to handle comb honey, had a small table in the center of the store that had been used to pile flour on. I told him to put his flour back out of the way and use the table for honey—comb and bottled. He did this, and for several months sold a case of each nearly every week. Then he got some peaches that he sold at 15 cents. The cans held nearly a quart, and it was a bargain, to be sure. He set the peaches on the table in front of the honey, partly hiding it, and it took him a *month* to sell a case of comb honey. His honey customers quit honey for peaches.

Editor Hutchinson then adds the following in a foot-note:

> I wish especially to emphasize the point of so placing honey on sale that the prospective purchaser can pick it up and examine it. Many are reluctant to ask to look at something that they may not buy. The examination of a displayed article carries no obligation to buy, but it often results in a sale. Display the honey and mark the honey in plain figures, and it will often sell itself.

The Connecticut Bee-Law

We received the following letter, under date of Aug. 3, 1909, from the Secretary of the Connecticut Bee-Keepers' Association:

> EDITOR YORK:—The Connecticut legislature, now in session, recently passed a foul brood measure, and I enclose a copy herewith.
>
> The committee on agriculture reported unfavorably on the bill presented by the bee-keepers, which bill was commended by a number of experts, and called for a $1000 appropriation, a sum none too large in the opinion of those who have a very good idea of the extent of disease in the State.
>
> The enclosed bill was drawn up by an interested member of the legislature, who, with others, felt that something ought to be done. Although it is quite unlike the original bill, it is believed an advance has been taken, and that better days are ahead for those unfortunate enough to be in infected localities, which seem to be getting numerous.
> JAMES A. SMITH.
>
> Hartford, Conn.

The Foul Brood Bill referred to by Mr. Smith, reads thus:

> *Be it enacted by the Senate and House of Representatives in General Assembly convened:*
>
> SECTION 1.—For the purpose of suppressing contagious or infectious diseases of the honey-bee, it shall be the duty of the State Entomologist, when complaint is duly made, to examine and verify, and treat or destroy cases of foul brood among honey-bees.
>
> SEC. 2.—In pursuance of the provisions of this Act, the State Entomologist, or any person whom he may appoint for that purpose, shall have access at reasonable times to such apiaries or places where bees are kept, and where honey-comb and appliances are stored, as may be designated in any such complaint.
>
> SEC. 3.—The State Entomologist is authorized and empowered to prescribe suitable forms for and to make regulations regarding such complaints, and shall keep the same on file and open to public inspection; and he is further authorized and empowered to

make, in his discretion, reasonable rules to govern, and reasonable payments for the services of agents whom he may appoint to carry out the provisions of this Act.

Sec. 4.—Any person who impedes, resists, or hinders the State Entomologist, or any agent whom he may appoint, in the performance of the duties imposed by this Act, shall be fined not more than twenty-five dollars.

Sec. 5.—To carry out the provisions of this Act the necessary expenses, to an amount not exceeding five hundred dollars, shall be paid by the comptroller on duly credited vouchers.

Miscellaneous News-Items

National Convention at Sioux City, Sept. 22-23

Don't forget the annual meeting of the National Bee-Keepers' Association at Sioux City, Iowa, the 22d and 23d of this month. It is during the annual Tri-State Fair, when special railroad rates will be allowed within 200 miles of Sioux City. As there are a large number of bee-keepers in the territory surrounding the place of this year's meeting, there will likely be a very large attendance. The National convention of bee-keepers has never been held in Sioux City. We shall not be surprised if the attendance is larger than it was at Detroit last year. We hope to meet there a large number of our friends and subscribers to the American Bee Journal. (See page 310.)

◆

A Call from Prof. Cook

Prof. A. J. Cook, the author of the "Bee-Keeper's Guide, or Manual of the Apiary," spent a day with us when passing through Chicago last month. He had been visiting at Columbus, O., Washington, D. C., and in Michigan. He was going to meet Mrs. Cook in Seattle, and then go on to Alaska, after which they will return to their home in Claremont, Calif. The Professor, although 67 years old (or young?) is in fine health, and looks not a bit over 50. California climate seems to agree with him. And, then, he agrees with the climate, and never tires of extolling its virtues.

◆

Honey Crop and Prices for 1909

In the central-northern States there appears to be a large amount of honey-dew honey gathered Particularly is this true in Ohio, Indiana, and Illinois. The last State has hardly anything, for there seems to be an almost entire dearth of white honey. This is, no doubt, due to the drouth of last fall, which killed out the white clover In Ohio and Indiana there is some white honey, but much of it is impaired by a general admixture of honey-dew. In Michigan there appears to be some honey-dew and quite a quantity of white honey. This latter will average from 25 to 50 percent, and in some sections there has been a very fair average.

Crossing over into Canada we find but very little honey-dew and a good crop of white honey.

In New York the yield is variously reported from a half to a full crop of white honey. The same is true to a great extent in New Jersey and the New England States in general.

In the States south of the Ohio River the reports vary considerably from full to no crop. Crossing the Mississippi River we find some honey-dew and considerable white honey in the Southwest

Throughout the alfalfa regions, with some exceptions, there has been a fair average crop. In Texas the yield has been good in some localities and different in others.

Prices for 1909.

In a general way we may say that there will be a good supply of alfalfa honey and a fair yield of California sage. This will have a tendency to ease up prices somewhat in the West.

For the eastern section of the country it seems to be now reasonably certain that the crop of strictly pure clover, or clover and basswood mixed—that is, honey without honey-dew—will be light. During September, October, and November prices on such honey should be considerably in excess of what they were last year, providing the influx of Western goods does not have too strong an effect.

There will be considerable clover honey, or clover and basswood with little honey-dew in it—not enough, however, to affect materially the flavor or color. This ought to have a fair market, and bring fair prices for table use.

Where honey-dew is very plainly present we advise selling it for bakers' use, or for stimulating for next spring. It should not be used for wintering. If sold it must go under the name of "honey-dew honey" don't forget that, or Uncle Sam may exact a heavy penalty for misbranding. Editorial in Gleanings in Bee Culture.

◆

Extracting Honey Without Opening Hives

This is the somewhat startling heading to be found in Gleanings, where L. W. Avant tells about a machine of his invention having a vacuum pump, by which the honey may be sucked out of the cells without opening the hive, or at least the hive is not opened so bees can issue from the opening. Instead of the ordinary midrib in each comb, there is a space between the two sets of cells on each side of the comb, which allows the insertion of a suction-box to do its work. It is certainly a very ingenious affair, which reflects credit upon the inventor, but whether it has any practical value, considering the necessarily expensive hives and combs, remains to be seen.

◆

Bees in Germany

According to official report, as given in Praktischer Wegweiser, in the German Empire the number of colonies of bees to the square mile of cultivated ground ranges from 9.58 to 44.03, averaging 19.16.

◆

Apiary of T. B. Kennedy

I am sending a picture of myself and part of the bee-yard, which had 20 good colonies after the winter was over. I have 35 colonies now, with prospects of a big crop of honey. I think that southwest Missouri is a fine country for bee-culture. I have been in the bee-business for only 4 years, and have had splendid success, having started with one colony. I use the 8-frame hive.

T. B. Kennedy.

Caplinger Mills, Mo., June 20.

◆

Heck's Repair Member

Jacob Heck has gotten up a little device that he calls "Repair Member," which is intended to repair a section when it is broken apart at a joint, and also to fasten foundation in split sections. A small piece of tin made just a little after the manner of a paper clip fastens the two parts together in a substantial manner. It is ingenious, but the appearance of the finished product is hardly desirable.

The Massachusetts Bee-Keepers' Field-Day

The Massachusetts Society of Bee-Keepers' held its annual field-day at Stoughton, Saturday, Aug. 7, at the bungalow "Apis" of Henry W. Britton. There were 140 persons present. The guests from Boston and other places in Massachusetts, and adjoining

Apiary of T. B. Kennedy, of Caplinger Mills, Mo.

States were met at the train by Mr. Britton and friends with automobiles.

A social hour was held from 11:30 to 12:30. Lunch was then served, and at 1:30 the meeting was called to order by Pres. E. Clinton Britton.

A change was made in the consitution, increasing the dues after next April from 50 cents to $1.00 per year. Fifteen new members were admitted, making the total 75.

Apiary of J. H. Baker, of Palmyra, Mo.

For the best sample of honey shown by bee-keepers, Judges F. H. Palmer, X. A. Reed and M. W. Barrett awarded the first prize, a fancy queen-bee, to Mrs. E. G. Everbeck, of Winthrop Center.

There was a demonstration of finding the queen-bee in a full hive, and after her "ladyship" had been shown those present, she was returned to the hive to be delivered in the spring to the winner.

There was an address by Prof. Geo. E. Stone, of the Massachusetts Agricultural College, on "Honey-Plants of Eastern Massachusetts." Commencing with the humble hollyhock, he showed its makeup to the bee-keepers, and then displayed a number of other flowers rich in honey-value, the white and sweet clovers being given high ranks.

There were cornet and trombone solos by E. Clinton Britton and Henry W. Britton.

Pres. E. C. Britton read an interesting paper on "How to secure 200 pounds of honey from one colony in eastern Massachusetts." This logical statement held the close attention of his audience.

◆

Foul Brood and Saliva

Woodhead states on the authority of Vignal that the bacillus alvei is an inhabitant of the human mouth—that great home of the bacteria, where Leuwenhoek first discovered them. It is well, therefore, in working among bees to remember that human saliva can infect, and can start foul brood, and if the conditions are favorable to the bacteria, can destroy all the colonies in the apiary.—*Irish Bee Journal.*

But why should one be spitting in a hive? Unless a tobacco-chewer? and the devotees to tobacco among bee-keepers are few. Still, there might be some danger in coughing, sneezing, or even in talking, if one has a free flow of saliva. But, really, are bacilli alvei common denizens of American mouths? Suppose we ask Dr. Phillips, of the Department of Agriculture, at Washington, D. C., to have Dr. White examine a few mouths of bee-keepers in that locality. Perhaps "locality" would be important in the matter of saliva.

◆

Apiary of J. H. Baker

I will send a picture of part of my apiary. I have 80 colonies. I like to work with bees. I also like the American Bee Journal. J. H. Baker.

Palmyra, Mo., May 25.

◆

Foul Brood in Illinois

Word comes from Washington that European foul brood has appeared in different parts of Illinois. Dr. Miller reports that it is to be found in different directions around him, and has invaded his apiary. So it becomes Illinois bee-keepers to be on the lookout for this pest. Watch sharp for the appearance of larvæ dead in their cells. There is little occasion for chilled brood this time of year, and if any dead brood is found it should at once arouse suspicion.

If, indeed, there is any suspicion of disease in brood, send at once a sample to Dr. E. F. Phillips, Agricultural Dept., Washington, D. C. Don't send it to this office nor to Dr. Miller. It will cost you only the postage to send it to Washington, and you will have reliable judgment from the highest authority.

A Back-Yard Apiary

I am sending you a picture of me and my 6 colonies, taken June 30. In the front is grass and alfalfa, and in the back are grape-vines with grapes, and the tree to the right is catalpa. It is all in my back yard.

David R. Strader.

East Prairie, Mo., July 1.

Apiary of David R. Strader, of East Prairie, Mo.

A Finland Bee-Keeper Calls

Mr. Paul Mickwitz, of Helsingfors, Finland, Europe, made us a brief call last month, when on his way to his native land. He has spent nearly two years in the United States and Canada, learning bee-keeping from the A. I. Root Co., R. F. Holtermann, Dadant & Sons, J. W. K. Shaw & Co., and others. He has become proficient in the ways of American bee-keepers, and in a month or two will go back to Finland to keep bees, perhaps in connection with his brother, who is a bee-keeper. Mr. Mickwitz is a very pleasant young man to meet, and from his general appearance, etc., will be very successful with bees in Finland. He says that honey is worth two or three times as much there as here, although they don't harvest as large crops. Their main dependence is white and alsike clover, and also heather; the latter being almost impossible to extract on account of its quick granulation in the combs.

The American Bee Journal wishes Mr. Mickwitz every success in bee-keeping in far-away Finland.

Langstroth Book "Special"

We have about 30 copies left of the book, "Langstroth on the Honey-Bee," of the edition just preceding the last. It is practically equal to the latest edition, and we will mail them so long as they last, for 90 cents a copy. (The regular price is $1.50.) Or, we will send one of the above 90-cent copies with the American Bee Journal one year—both for $1.30. Surely this is a bargain. Remember, we have only about 30 copies left, so if you want one of them you will need to get your order in quickly. Send to the office of the American Bee Journal, 146 W. Superior St., Chicago, Ill.

How About Your Advertising?

Have you anything to sell? Any bees, honey, hives, or anything else that you think the readers of the American Bee Journal might want to buy? If so, why not offer it through our advertising columns? See rates in the first column of the second page of every number of the Bee Journal. We try to keep our columns clean and free from any dishonest advertising. Such cannot get in, if we know it. We want the patronage of just as many clean, straight, square-dealing advertisers as we can secure. No others need apply to us for space.

Northeastern Wis. Convention

The Northeastern Wisconsin Bee-Keepers' Association will hold its next convention in Mishicott, Wis., Oct. 26, 1909. A program will be prepared, and all bee-keepers who can possibly attend are cordially invited.

CHAS. W. VOIGT, *Sec.*
Tisch Mills, Wis.

Some Congratulations

Hon. Eugene Secor, of Forest City, Iowa (now postmaster there), wrote us as follows Aug. 18, 1909:

> EDITOR YORK:—I want to congratulate you on the continued improvement in the American Bee Journal. You are publishing a good paper, and I don't see but that it fills the bill just as well as a weekly, now that we've gotten used to it.
>
> And that grand young man you've called in to help you—Dr. Miller—how we love him! May he live to be a hundred years, to prove that bee-keeping combined with lovableness are the guarantees of longevity.
>
> EUGENE SECOR.

Accompanying the foregoing much appreciated words, was this beautiful, as well as seasonable, poem:

A Golden Anniversary Song.

A flame is on the goldenrod,
It lights up every lane;
A joy is in my heart again—
And both are gifts of God.
The goldenrod was bright that day
When we as lovers plighted—
When we as lovers were united
Beneath its golden spray.

Sunshine got tangled in the flower
And lingers with it fain,
And sunshine lights Love's golden chain
That binds us in our bower;
And sunshine glints along the road
Of life, with love along,
And strains of golden-noted song
Have blest our joint abode.

The golden-belted honey-bee
Brings golden harvest home,
To store in golden honey-comb
Her well-earned golden fee;
So when the golden beauties nod,
And love is sweet and true,
I bless the Father for these two—
For *thee* and goldenrod.

EUGENE SECOR.

A Humming Business

"So you like the experience you have of keeping bees?"

"Yes; you see no matter how the market is depressed in other things, it is a business which keeps on humming."

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

The Buckwheat Prospects

Buckwheat is late with us this season, and ordinarily we get our surplus from this plant before Aug. 25, in our locality. However, if we should get 2 weeks or 10 days of warm weather the prospects are good for a crop of honey from this source, as we have a large acreage and the recent rains have put it in great shape.

Some of the Season's Experiences

We were fortunate in holding our bees well together during the very short and rapid flow we had from clover, and naturally when the clover was passed no more trouble from swarming was anticipated. However, this is a year of extremes and contradictions in the bee-keeper's line, and the swarming feature is not an exception to the other problems confronting us in the business. Although little surplus came in for two weeks or more after clover, yet there was a "picking" all the time, and then buckwheat came into bloom.

At the Altona yard the buckwheat bloomed earlier than at the other places, and whether because of very populous colonies or other reasons not accounted for, anyway the bees started to swarm. It may be supersedure, but in the most cases last year's queens are the ones that have been causing the trouble, while there are a lot of 2-year-olds in the yard.

On Aug. 13 I happened to be at the yard, and out came an enormous swarm with an old, clipped queen. By the number of dead bees around the entrance of the hive nearest the one swarming, I could see that they had been out once before, anyway, and probably two or three times. Examination showed the young queens to be emerging, so it is altogether likely they had been coming out for 4 or 5 days hand-running.

Today (Aug. 18) another big swarm came out, and in this case the young queen was with the swarm, and others were emerging inside of the hive. Clipped queens certainly saved both of these swarms for me, and although of not so much value as earlier in the season, yet the prospects are that they will fill up in good shape for winter.

Today I took an inventory of the yard under discussion, and I find that one swarm has absconded since the clover flow, yet the value of that one swarm would not begin to pay for the time that would have been necessary for an occasional visit and examination of colonies.

Canadian Honey Crop Crisis

The Canadian Bee Journal for July was issued late, so as to include the report of the Honey Crop Committee. This says in part:

> It was somewhat of a surprise to us to find the average yield per colony only about 59 pounds—a trifle over that of last year, which reported 55 pounds. In the face of this the Committee concluded that honey should command almost as good a price, and suggest No. 1 light extracted 9½ cents to 10½ cents per pound, wholesale, and 12½ cents per pound retail. For No. 1 white comb, $1.80 to $2.25 per dozen, wholesale. No. 2 comb, $1.50 to $1.75 per dozen, wholesale.

Ontario Apicultural Experiment Station

Everybody has been so busy that scarcely anything in the way of apicultural news has been circulating. Personally, I have been wondering how the new Apicultural Station has been progressing, but by reason of this busy time, as mentioned, I have not written Mr. Pettit. However, I had the pleasure of meeting Secretary Hodgetts for a few minutes just a day or so ago, and from what he tells me I believe the buildings, equipment, etc., are going on nicely, and in the near future we will have a station for apicultural investigations that will be a credit to the industry.

I have faith in Mr. Pettit, and I believe he enjoys the confidence of the bee-keepers as a body; this, with a friendly Government, should surely give us all we could reasonably ask for.

Golden Italians and Black Brood

When speaking about the black brood outbreak, I forgot to mention that Mr. Scott is very enthusiastic over the Golden Italians, as they seem much more immune to the disease than are other races of bees, the leather-colored Italians not excepted.

I have been rather prejudiced against these bees, on account of their poor wintering outdoors in our latitude, but in the section where the disease is raging, cellar-wintering is practiced almost exclusively, and they seem to winter all right.

Mr. Scott says he purchased a leather-colored breeding queen for $10, last spring, but the disease broke out in the colony before the summer was spent, while all the Goldens in the yard remained immune. If the Goldens are immune to a certain extent from this plague, certainly that trait will counterbalance, and more, quite a multitude of faults, should they exist. Mr. House, at our convention, has strongly advised the introduction of all Italian stock in localities where black brood is present, but I do not remember him specifying the Golden strains in particular.

Black Brood in Eastern Ontario

I am sorry to say that the black brood outbreak in Eastern Ontario is spreading badly. A letter just received from Inspector Scott, informs me of this fact, and he is strongly of the opinion that it would pay the Government to step in and destroy outright all infected apiaries, and compensate the owners where good apiaries are so treated. It seems to be of a particularly virulent type, and while it yields to treatment temporarily, yet it is liable to break out again, when there has been no possible means of reinfection by robbing.

Mr. Scott says that in our present methods we are simply "chasing" after it instead of "heading it off," and he says he sees no reason why, at its present rate of spreading, that it will not reach the bee-keepers of Western Ontario in a very few years. From my experience with the disease in the infected districts two years ago, I can readily believe that it will overtake us in a hurry, unless radical measures to stamp it out are taken at once. Foul brood as we have known it in the past, is a mere bagatelle as compared with this new pest, and while it now seems to be under control in New York State, yet it has cost the State a lot of money to fight it, and it is a question if the work could not have been done more quickly and more cheaply if it had been stamped out vigorously when the outbreak first was discovered.

There is something peculiar about the spreading of this disease. Unlike American foul brood, it will go all through an apiary in a few weeks when there is not a bit of robbing going on. The old-time disease that we have been familiar with is chiefly spread by robbing, and knowing this we have been trained to guard against this point of attack. Under this new disease's insidious methods of attack, we are almost entirely helpless, and it is all through an apiary in a hurry after the first cells of disease are noticed in a single colony. Where the disease is and has been raging, are situated some of Ontario's best bee-keepers, and naturally they feel sore when they see some who have never been near the infected districts, making light of the outbreak as though it were not anything out of the ordinary.

I do not wish to pose as a prophet but I unhesitatingly venture to surmise that if the present condition prevails without checking, in a few years there will be a lot sadder if not wiser bee-keepers in the Province than is the case now.

Pollen from Basswood

Since writing that note on basswood pollen, as reported in the August American Bee Journal, I have looked in the "A B C of Bee-Culture," and there I find that Mr. Doolittle says that in his belief basswood never yields pollen. A day or so after writing the note referred to, the weather turned warm and balmy—ideal conditions for basswood to yield honey, one would think, yet not enough honey came in from the basswood to give us a taste. However, pollen from the blossoms came in abundance, and for about 10 days from 6 in the morning until about 10 or a little later, the trees were swarming with hundreds of bees, *all* laden with this light yellow pollen. In fact, some of the super-combs were half filled with the pollen, and it is plainly in evidence there yet. Why no nectar was in the blossoms is a mystery, but we know there was none, and the same condition prevailed for quite a large section of Ontario. Farther west I understand there was considerable basswood honey gathered, yet nothing like the old-time crops we used to hear of, and obtained but *once* since I have been keeping bees.

Color of Alsike Clover Honey

It has been claimed by some that alsike clover does not produce as white a honey as does the white clover. Well, this year there was not enough white clover within 3 miles of my yards to fill a bushel basket with the blossoms, if they had all been gathered, consequently all of our honey came from the alsike. Judging by the quality of this year's crop, I doubt if the white clover produces a honey any whiter than does the alsike; and as for flavor, it would be hard to beat the clover honey that I have seen all over three or four counties, and all from the alsike.

By the way, the prospects are none too good for the alsike next season, as the very severe and prolonged drouth that prevailed shortly after the clover was sown, literally dried the life out of the plants. After clover is rooted it is hard to kill by drouth, but for a few weeks after first being sown, a drouth like the one we had last spring will fix it. Farmers all around us are complaining of poor "catches" of both red clover and alsike.

Reflections
of a
California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

A Foul Brood Doctor

As matters stand, too often politics has much to do with the appointment of foul brood inspectors in California, and frequently the qualification of the applicant is not taken into consideration. In this respect our bee-keepers have to suffer as do almost every other class of our population, since party practises, which are almost synonymous with graft, demand the placing in position of the man with the biggest pull be he saloon manager or saloon bum, or something almost as bad. So hurry the day when merit and qualification shall rule this government from the humblest office to the most exalted position in the gift of the people!

Let's take the case of how a bee-doctor is made; 'tis not a personal one, but it comes mighty near being a true one. Old Bill Bilkins is a sort of character in his town near the Nevada State line. Bill likes whisky, and is very handy with his tongue, and this accounts for his being able to tell some mighty powerful stories—in fact, the boys say he can tell the biggest yarns of any man for a hundred miles around.

Bill has a mining claim, and besides digging in his vegetable and berry-patch he sometimes turns over some of the red dirt in his search for the yellow metal. Then he has a few colonies of bees in old box-hives. He secured the bees by "getting a line on a bee-tree" over towards Devil's Roost. In the fall of the year he robs the major portion of his colonies, as the neighbors down at the ford annually want some of his honey to lay by as a medicine for colds and croup. Some of the good women secure several gallons of Uncle Bill's ambrosial nectar, as they vouch for its being better for the children's bread than syrup.

One year Bill's carelessness robbed him of all his colonies but one. He had a genuine case of foul brood, but he did not know it until the following season when he was telling an old-time bee-keeper, whom he chanced to meet, of the peculiar disease that caused his bees to die. The bee-keeper told him all he knew of the malady, and that there was a statute against the spread thereof, and that the supervisors had it in their power to appoint inspectors at so much "per diem," as the law-books put it.

Ten minutes later Bill was glued to one end of a telephone line; at the other he had the District Attorney. He wanted the county officer to give him the law relating to foul brood, especially that portion concerning the appointment of an inspector. Getting what he wanted he then proceeded to Denny McNuggett's shebean to formulate a line of action on the dignified and honorable position of County Foul Brood Inspector. Denny, as the local dispenser of potheen, beer and politics was usually called, soon had the whole thing fixed, for didn't he know the majority of the members of the Board of Supervisors?

And so at the next meeting of the Board boistrous Bill Bilkins was made bee-inspector; he qualified that day and at once set out to drive the dread disease from his county. He proceeded over the mountains on his strenuous old horse "Teddy" to Mother O'Rankin's. This old lady and her husband went to the mines close to the days of Forty-nine, and as the golden metal did not come their way through the pan and cradle, they started a small roadside house or inn. As the mining industry waned, they added farming to their line of occupation, and in time they secured a few colonies of bees. Inspector Bilkins knew this, and he planned to inspect the widow's bees, for the lord of the establishment had long since ceased to be a dweller of the mountains, for he left for that Land beyond the clouds. And Bill knew that he would take advantage of the opportunity and secure a night's lodging and two square meals at the poor lady's expense, for it was now a part of Bill's religion that he, the honorable bee-doctor of his county, would not pay for anything during his inspection trips.

"Dr." Bilkin's first official act after leaving Teddy's back, was to invade the small apiary in the rear of the inn. As he came near the bees Mrs. O'Rankin approached him and said: "Phat is it that you wonld he afther having, Bill?"

"Having? nothin' mum; I'm the Foul Brood Doctor, and I come to look after the health of your bees, mum. They have the disease, and I shall have to report your bees infected; don't you smell the dreadful stench that comes from your bees?" he went on to say before he as much as had an opportunity to open a colony.

"My bays have the malajy, eh; and you will rayport me, too. Phat's that you say, you a doctor? Bah! Away wid ye, or I'll drive you out, you miserable crayture, to be coming over here and saying a poor widdy's bays are rotten. 'Tis yer miserable self that's corrupted, and ye had better heal yerself," the Lady of the mountains went on to say very indignantly.

"But I say your bees have the disease, and they shall have to be destroyed. Where are your senses if you can't smell the frightful odor emanates from those hives?"

By this time the widow had come up to him, and as she was carrying a pail of swill to her pigs, she could not resist the temptation to throw the pail's contents on the "doctor," and she did, saying, "Take that ye miserable poltroon, for insulting me and my bays."

The woman's onslought was so sudden and severe that it sent the "doctor" over sidewise, so that he fell into the midst of a brood of young pigs, to say nothing of the nastiness he became mixed up in.

"Be off wid ye at once or I shall turn the dog loose on ye, and never let me see ye come a loafing here again."

And the "doctor" went, and he and his Teddy traveled all that night and without supper until they came to the home of the next keeper of bees, some 25 miles away. What his next reception was may be told in a subsequent issue of the Old Reliable.

Poison Oak—Blooms in April and May.

Valuable Honey from a Noxious Source

What marvelous things happen in this world! Man often prepares foods of the most appetizing and wholesome nature from plants and fruits that ordinarily are absolutely injurious to human life; for instance, tapioca. And the bee is not much behind man in the same regard, too. To be sure, it is not a knowledge of chemical science that prompts this insect to make honey out of poison. In the case of the nectar the bees collect from one of the most dreaded plants to most persons on this coast, I will not venture to say that the bees convert the poisonous fluid into honey, but rather, that it is one of the changes of natural alchemy.

I have yet failed to find a place in California that is free from poison oak, (Rhus diversiloba); and it is also hard to find few people who are immune to its ill effects during the spring of the year, especially (I pride myself on being one of the exempt ones, thank goodness.) But what a world of merriment the blooming plant affords the bees! And many believe that the finest honey we obtain is from the nectar of *Rhus diversiloba*, the much dreaded and despised poison oak—the bane of the average picnicker and summer-resorter. The honey is clear, almost white, of heavy body and delicious flavor. It commences to bloom in the last week of April, and continues several weeks in May.

Contributed Articles

Honey-Dew for Wintering Bees

BY C. P. DADANT.

"Mr. Dadant:—My bees have harvested a lot of honey which is as dark as molasses, and I am told it is honey-dew, and that this is unfit for wintering bees. What would you advise me to do about it?"—Iowa.

You are in the same position as thousands of others, for the crop of honey-dew seems to have been quite universal within several hundred miles, wherever there is timber, and even in some places where there is very little timber. The honey-dew is now positively known to be produced by the plant-lice or aphides. Much speculation was caused by the fact that the "dew" is found as well on leaves that are at the top of the tree or shrubbery, and on which no lice can be found, the lice being most usually on the underside of the leaf. But it was ascertained that the winged aphides are capable of producing this liquid substance, as well as the wingless aphides.

In the neighborhood of trees infected with the aphides, the spray of honey-dew may easily be detected by placing yourself in the shade with your eyes turned towards the light produced by the sun. You can then see the smallest bodies in the air, just as you can see the dust through a ray of sunlight gleaming in a crack of the shutters in a dark room. Honey-dew is often found on dried leaves or on the trunks of trees—a very plain evidence that it is not an exudation from the sap. But there are some sorts of honey-dew produced from sap. These are exceptional.

The honey-dew with which we have to deal is a very dark substance, which often has more or less of the flavor of the trees on which it is gathered. Thus I have often tasted a nutty flavor in that gathered on the hickory leaves, which seem to be here the greatest harbor of the plant-lice.

Although I have not seen any tests of the quantity of saccharine matter contained in this product, I consider it as quite sweet, but off flavor. It may be used for pastry, for sweetening wines, and is often purchased by tobacconists. I have a recollection of at least 3 large crops of this substance in the past 35 years. Although it brought a low price, we had but very little difficulty in getting rid of it. There is a question in my mind whether it could not be clarified and bleached, as they clarify and bleach the sugar syrups. Its color is against it.

As to its qualities for wintering bees, I can very positively say that it is objectionable. There is undoubtedly much foreign substance in it, and in long winter 'confinements the bees suffer from its use. I would not, under any consideration, try to winter bees in the cellar with the honey-dew as winter stores. Wintering out-of-doors would be much safer if it happens that the winter is mild, and the bees can have a flight about twice a month. Honey-dew is less injurious than the fruit-juices which ferment in the hive as soon as harvested, but it is inferior even to the darkest fall honey more or less loaded with pollen.

We are so convinced of the unadvisability of wintering bees upon this crop that we have taken out of our hives all of this substance that we could readily extract. The season has helped us to do away with it, for the bees have bred heavily out of the remaining honey during the latter part of July and forepart of August, and at this date (Aug. 15) there is very little of the product left in the combs, the new honey having begun to come in. I have never seen any production of honey-dew at other times than June, and it is advisable to remove it (when the bees harvest much of it) as promptly as possible after its flow. Well ripened honey-dew granulates thoroughly and keeps well, which is to me an evidence that it is much similar to honey in its nature.

In removing the crop we extracted from every comb that did not contain unsealed larvæ. The brood-combs from which we extracted were then placed in the center of the brood-nest. By this method we are sure to secure several combs without honey-dew in the brood-nest, at the part where the bees congregate to endure the longest confinement.

Those who find their hive-bodies well filled with this substance at the end of the fall flow, should not hesitate to extract it and to feed other honey. Sugar syrup, percolated by the method first recommended by Dr. Miller, is good bee-feed to replace honey-dew; but I never feed sugar syrup as long as I have honey which is healthy and well ripened. I have two reasons for this, which are very plausible to me, although they may not appeal so strongly to others. The first reason is, honey is the natural resource of bees, and that their stomachs are therefore fitted to digest it more satisfactorily than any artificial preparation. The second reason is, if I buy sugar when I have honey to sell, I give outsiders an opportunity to accuse me of feeding my bees to produce honey, and no matter how nonsensical this accusation may be, I much prefer to give calumny no grounds for excuse.

But let me strongly urge bee-keepers to feed sugar syrup rather than buy unknown honey for bee-feed. The finest looking honey in the world may be tainted with foul brood. The germ of the bacillus is absolutely harmless to human beings, and the prettiest honey could give no warning of its danger for the bee-larvæ. But honey in the stomach of the worker-bee is in the very best position to develop any injurious microbe in the food of the larva. Our bees are too valuable to us to be exposed to unknown dangers. So if we cannot feed our own honey, when we remove the honey-dew from the hives, let us feed only such honey as we know positively to be immune, or let us use sugar syrup.

Hamilton, Ill.

Bee-Stings and Rheumatism

BY DR. A. F. BONNEY.

Frequently in the bee-papers, and occasionally in the daily press, we see mention of bee-stings as a "cure" for rheumatism, notwithstanding that medical men abandoned the theory many, many years ago as a result of constant and persistent failures to "cure."

Century Dictionary: "Cure: The successful remedial treatment of a disease; the restoration of a sick person to health."

The more incomprehensible a superstition the harder to eradicate it from the minds of the people, and this proposition that a bee-sting will cure rheumatism is the hardest to understand of any the writer has ever heard. The added statement that it will not, probably, cure *all kinds* of rheumatism adds to my mystification, for to the medical world there is but one kind of rheumatism—a disordered condition of the system caused by an excess of uric acid in the blood. However, to read what the non-medical healers assert, one might think that "lumbago," "sciatica," and "muscular rheumatism" were the result of entirely different causes; but as the contact of red-hot iron with the small of the back, the thigh, or the bicept muscle will cause a burn, so will uric acid crystallizing out in the lumbar muscles cause lumbago; in proximity to the great sciatic nerve cause sciatica; and in any of the muscles of the arms and legs muscular rheumatism. That it becomes pleurodynia in the muscles of the chest, neuralgia in the face, and gout in the toes, the writer holds, for it is capable of proof that uric acid will cause the troubles mentioned.

Then we have rheumatic iritis in the microscopic muscles of the eye, rheumatism of the heart, etc., to the inflammatory rheumatism of the older writers, and the assertion that bee-stings will cure only one form of rheumatism only shows the dense ignorance of those who rush into print about a subject of which they know nothing, a matter which has been the despair of the most learned physicians that ever lived, and it is as much a problem today as it was in the time of Hunter. These self-constituted healers go so far as to take *effect* for *cause*, for I verily believe more cases of rheumatism are caused by bee-stings than cured.

Let us look into the matter a little. So far as the writer knows there is not a medical writer who asserts that bee-stings will "cure" the trouble mentioned, or that it will even relieve.

Oh, Cure! how many sins have been committed in thy name!

There is a logic for the statement that a bee-sting will cause an attack of rheumatism, always remembering that medicine is far from a science; nothing more, in fact, than intelligent guess-work, which accounts for the hundreds and thousands of patent medicines (and there is no such a thing as a *patent* on *medicine*), and the scores of schools from the old "Regular" to the new Osteopath.

Century Dictionary: "Urea: Carbamide, CO (NH2) 2, a crystalline solid, *soluble in water*, and forming crystalline compounds with both acids and basis." Being soluble in water the urea penetrates every part of the system, and the chemistry of the system changes it into (Century Dictionary): "Uric acid, an acid, C5N4H4O3, characteristic of urine. It crystallizes in scales of various shapes, * * is heavier than water, nearly insoluble in it when cold, *and only to a slight extent dissolved by it when hot.*"

The italics are mine, because I wish to call attention to the fact that we have no *quick* and *true* solvent for uric acid which now exists in every microscopic part of the body, brute or human, for the lower forms of life have the same trouble. The crystals have to be eliminated by the pores of the skin and by the great sewer of the body—the urinary tract. True, it does seem sometimes as though electricity, hot baths and other things do good—"cure," if you will—but like cause (treatment) does not always produce like results (cure).

The liver is constantly taking nitrogen from the system and converting it into urea, which exists as one of the normal constituents of the blood, and some of it is converted into uric acid. In process of formation this is fluid, as are all crystalline bodies. After it is formed it is thrown from the body by the kidneys and through the perspiration, and here is the cause of rheumatism—the failure of the system to throw off or expel the surplus of poison, the crystals of uric acid prick the tender nerves. This is rheumatism.

If the system could be kept at one temperature, if there were no physical or mental shocks, no bee-stings, no alcoholic intoxication, no exposure to cold winds, a person might never know of the existence in its circulation of an excess of uric acid. The cold, and wet, and mental shock, have been proven a cause of a rheumatic attack—I believe bee-stings will also cause it. Not the poison of the sting, but the shock, the pain. But a sudden change of temperature will not always cause rheumatism, nor will mental shock, or bee-stings, even if the system is surcharged with uric acid, and it may surprise the bee-sting doctors to learn that we can determine to a margin of one percent the amount of urea in the blood. By that same token, what will cure the disorder in one person may not in another, nor, for that matter, will it always cure the same person twice. This applies to electricity, hot baths, and medicines. I shall not try to list the latter, for *every drug in the pharmacopœa* has at one time or another been used by the doctors in THEIR VAIN HUNT FOR A CURE FOR THIS UNIVERSAL AILMENT. And when a person states that he has "cured" 10, 50, 100 cases by bee-stings, and that, too, without a failure to report, I simply do not believe it. The printer made a mistake setting up the types, and if the bee-men who are writing about cures will wait awhile they will find themselves like the doctors, who, when they have found a cure, and about to publish it to the world, suddenly find that their pretty fabric was rotten at the foundation.

Thirty years' experience in the practice of medicine justifies me in the assertion that while the doctors know mightly little about CURING disease, the laity knows a great deal less, and that the first thing a person does when he has an attack of rheumatism, is to rush to the doctor or the drug-store. He will stay by the Medicine Man or the druggist until he loses faith, then go to taking hot baths, electricity, faith cure, osteopathy, and what not; and I have yet to find that they ever went to the bee-man *first*. The logic of this is, no one may know what effected a "cure," if there be such a thing. It might have been the doctor's prescription, for they do not always kill; possibly the mud baths, the static machine, absent treatment—any of the hundred and one things they have experimented with; or, possibly, the true explanation is, Mother Nature stepped in, removed an obstruction, and the disease abated. It is not logical to give credit to the *last* remedy used, but people always do it, and this popular weakness accounts for the success of certain "patent" medicines—that and advertising.

Negative evidence in this vicinity is to the effect that bee-men "have rheumatism more or less of the time," as they tell me. I have, though I am careless with my bees and am stung daily. I do not know a bee-man who has not rheumatism some of the time, and being stung (I quote), "does not seem to make a bit of difference one way or the other."

An attack of rheumatism is self-limited; that is, even the articular or inflammatory type, will abate in a certain number of days *without treatment* of any kind, IF the patient has strength to survive; and in milder manifestations of the disease, sometimes called *myalgia* and *myodynia*, the patient will be down one day and up the next, without taking a drop of medicine or a bee-sting.

Strictly speaking, according to the Century Dictionary and Dungleson, "Rheumatism" means the disease commonly called "Acute Articular Rheumatism," or Inflammatory Rheumatism, a trouble characterized by swelling of the joints, high fever, and excrutiating pains; though to quote the Century again, "The word is used with a certain and unfortunate freedom in application to joint pains of various origin and anatomical forms," and, I might add, to almost any kind of an ache which the patient does not understand. It is these cases which are "cured" by non-medical healers.

In this article I have tried to conform to the usage of the word by uninformed writers who do not know the rudiments of diagnosis, the effect of drugs (medicines) on the human system, the composition of the remedies they apply; yet a person comes to them and says, "I have rheumatism." The bee-sting doctor applies a few hundred stings gently, and lo! they have found out something that hundreds and thousands of educated and observing medical men have failed to discover—that bee-stings will cure rheumatism. Tush!

For five years I have experimented with bee-stings in hopes of getting relief from asthma; then tried it on an eczematous patch on the leg (mine), and have observed that I have rheumatism more since working with the bees than formerly; but that is because I am older and more exposed to the weather.

The only effect I have ever been able to get from bee-stings was an eruption of hives—*urticaria*—and I believe that to have been due to uric acid, though the disorder is purely nervous in its manifestation. I did once have a case of bee-sting in a woman of 40 where the patient died, but it subsequently transpired that the cause of death was (probably) a "remedy" given by a neighbor woman before the doctor arrived. Stories in the newspapers about people being killed by bee-stings I take mighty little stock in. I have been a newspaper writer too long myself.

Buck Grove, Iowa.

Brood in Section Honey, Etc.

BY G. M. DOOLITTLE.

> ' I have been troubled with brood in my sections of honey for several years. Will Mr. Doolittle tell us in the American Bee Journal what can be done to prevent this? I use an 8-frame Langstroth hive. '

Years ago, when all of the hives which were in use contained from 2000 to 2500 cubic inches, brood in the surplus boxes was of rare occurrence, but since the movable-frame hive came into general use, and especially since many of our best bee-keepers have been recommending hives as small, and some even smaller than an 8-frame Langstroth hive, which is less than two-thirds the size which was formerly used, so as to secure a larger surplus of section honey, brood in the sections is of quite common occurrence. Nothing is much more provoking to an apiarist when he goes to a hive,expecting to find all of the sections filled with nice white honey, than to find them filled with honey from half way to within an inch or so of the bottom, as he expected, and the rest filled out with brood.

Another thing which causes this state of affairs to exist is the excluding of all drone-comb from the brood-chamber of all hives except 3 or 4 having our best breeding queens, as is recommended in our bee-papers and bee-books. I do not butt against this; but bees will have some drones, and if they cannot rear them in the brood-chamber, they will do so in the sections, if any chance is offered for so doing there.

Now there are three ways of keeping the queen down below where she belongs, the first of which is a large brood-chamber, as has been hinted at. But as this is a kind of remedy the advocate of small brood-chambers does not like, he will, in all probability, not accept of it. About the time that contraction of brood-chambers began to be thought of, comb foundation was invented, and it soon became apparent that if the queen could not find any drone-comb in the surplus apartment, where the bees were averse to brood in any event, that with worker-comb foundation in the sections, the remedy would be complete. Then, again, honey stored in worker-comb presents a much finer appearance, so we were not long in deciding that if we would reach the best results we must fill our sections with foundation, which the larger part of our bee-keepers do today. But contraction became a fever in the minds of some, and was carried on to such an extent that the queen had not room enough left below in which to indulge her egg-laying capacity, even for worker-brood; so some of us would have sections completely filled with such brood.

Not to be foiled, bee-keepers soon brought into use perforated zinc, the perforations of which were so nicely made that it would readily allow a worker-bee to pass through, but when the queen came to try she could not do the same. In this queen-excluding zinc we have a perfect thing, so where a a queen-excluding honey-board is used it is impossible to have brood in the sections or supers of any kind, and all drones would also be kept out, which saved our nice white capped sections from being fouled with their excrement when ridding our sections of bees, as was often the case previous to this.

There has been quite a little theorizing about this method of keeping the queen and drones where they belong, some claiming that not so much honey could be obtained where the bees were compelled to pass through so small an aperture to reach the sections, claiming that bees are often loth to enter the sections where the most open passage-way possible is not given. However, time, that prover of all things, has shown that these theories are more fallacies than otherwise, for facts have proven that as much honey is stored where perforated honey-boards are used as is stored without them, and so it has come to pass that such are considered one of the essential things by nearly if not quite all bee-keepers.

But it was soon found that all metal honey-boards were too expensive, as well as too frail to be taken from the hive after being glued down during the summer months without the perforations being pulled out of shape; so again the inventive genius of the apiarist was called into use, and we soon had a combination of zinc and wood, which gave us a much better board, and one which was at the same time rigid enough not to get out of shape and spoiled by being kinked when it was taken from the hive; besides, it was much cheaper and answered the purpose even better than the board wholly of zinc.

But I think I hear my questioner saying, "That may be all very well, but I am not so rigged. What shall I do?"

Well, I think the best advice would be that you get so rigged. However, if you think otherwise, there are two or three ways of working without the wood-zinc honey-boards. When brood is found in the sections, the "what shall be done" will depend very largely upon what stage the brood is in when found. If in the egg or larva form, take such sections off the hive and carry them to the cellar, leaving them for 5 or 6 days till they all die from exposure to the cool damp air, when they are returned to the hive, and if the queen does not enter them again they will be filled, if the season holds out, and look as good as if no brood had ever been in them; for the bees will remove every particle of offensive matter, making all as good as new.

If the brood is capped over, take an uncapping knife and shave off the brood down to within one-fourth of an inch of the septum of the comb and return it to the hive. The bees will now clean it up and build the cells out again, very much the same as they would work out foundation, but the honey will not have quite as nice an appearance when held up to the light for looking through, as it would had there been no brood in it; especially so if any of the brood or larvæ had begun spinning their cocoons before the combs were shaved. Then, the brood can be left till the mature bees emerge from their cells, when, if the season holds out it will be filled with honey, which will have to be sold as third or fourth quality, on account of its looks and the cocoons toughening the cell-walls of the combs.

Years ago, where I found sealed brood in any sections, and at the same time had colonies which refused to enter the sections, I would take these sections, bees and all, and carry them to these obstinate colonies, when they would at once go to work above, instead of crowding the queen with honey below, to the detriment of the colony and my desires for section honey. At the end of the season these sections were uncapped, put in a purposely made frame, the frame holding 8 to 12, as the extractor would take, when 2 such frames of sections were put in the extractor and the honey thrown out, after which the combs were melted into wax.

Borodino, N. Y.

Getting Rid of Foul Brood

BY M. M. BALDRIDGE.

I am positive that I know how to get rid of foul brood in my own apiary, and I see no reason why others cannot do likewise. I think my plan is so very simple and practical that any bee-keeper, though a novice, can adopt it, and with the best results.

In the first place, I cage the queen of the diseased colony so as to stop breeding, and then place the caged mother in the top of the hive where the bees can have ready access to her, and likewise so I can get possession of the cage when needed and with the least possible disturbance of the bees. I then bore a hole—say an inch in diameter—in the front end of the hive, a few inches above the bottom entrance, and fasten a metal bee-escape over the hole and on the outside of the hive. I do the foregoing towards sunset, and then let the colony alone until the next morning.

I now prepare an empty hive by filling the brood-chamber with a set of frames—less one or two—filled with foundation or simply narrow strips of the same. I now go to any strong healthy colony and remove one or two combs of brood, with or without the adhering bees, and place the same in the prepared hive.

I now gently as possible reverse the diseased colony, or turn it end for end, and move it sidewise the width of the hive, or a trifle more, and leave the bee-entrance open; when this is done I then place the prepared hive on the old stand, but with its bee-entrance in the opposite direction. This may all be done any time in the forenoon, or when the bees are busy getting honey from the flowers. The bees will now, on their return from work or play, enter the prepared hive and remain there, and within 2 or 3 days the main force of the matured bees will be transferred to their old location.

Now towards sunset blow a few puffs of smoke upon the caged queen, to drive the bees away from it, and then transfer the queen to the colony in the prepared hive. She may be given her liberty at once, and by way of the bee-entrance. Now close the bee-entrance to the diseased colony so that no bees can pass in nor out except through the bee-escape, and gently reverse the hive again so that both hives will now front the same way. Both hives should now set close together, or within an inch or so of each other. From now on all the bees in the diseased colony must pass out or through the bee-escape, and as they cannot return they must and will go into the prepared hive. In about three weeks all the healthy brood in the diseased colony will be hatched out and soon thereafter all the bees will be found in the prepared hive—and no loss of either bees or labor. The contents of the diseased colony may now be taken to some proper place and be disposed of by burning the same. This is best done in a room or building to which no outside bees can gain access and get at the honey. But it is not necessary that this should be a total loss. Such combs as contain honey and are free of diseased brood, may be extracted and saved for table use, and the empty combs melted and made into wax—those that contain brood may as well be burnt up at once —frames and all—as the cost of replacing them nowadays is but a trifle anyway.

By this time the prepared hive will or should be full of both comb and brood, and without any foul brood or any trace of the disease. In fact, it will be, and remain, a healthy colony. At least that has been my experience.

The new empty hive may, by simply scraping it thoroughly, be used again with no recurrence of the disease. At least that is my belief. But should the reader believe otherwise then the empty hive may be thoroughly disinfected by simply boiling it in water or by heating it with fire—and this can be done without doing the wood any material injury. When done by fire, simply paint the inside of the hive with kerosene oil, and then throw inside of it a burning paper, then watch the fire closely, and when it has done its proper work, cover the hive with a board and smother it out. The inside of the hive throughout should now be about as free of foreign matter as when new. The disinfected hive may now be used and with no danger of any germs of the foul-brood disease therein.

The foregoing treatment of the foul-brood malady is based upon the generally accepted theory, which I endorse, that the honey in the combs of a foul-broody colony is more or less impregnated with the germs of the disease. The manipulation given simply but successfully transfers all the bees—nurse-bees in due-time included—from the foul-broody colony to another hive free from disease, and without any of the diseased honey in their bodies, nor in the food the nurse-bees may have in their stomachs. All the nurse-bees by this plan remain in the diseased colony until their baby-food becomes exhausted, and the method outlined is the only one I am acquainted with that secures this result when the combs of the diseased colony are filled with brood in all stages of its growth.

To conclude: As soon as foul brood is found to exist in an apiary, please don't get excited nor foolish, and thereupon burn or otherwise destroy the entire apiary. The better way by far is first to ascertain as speedily as possible how many colonies are diseased, mark them, and then let them severely alone until the proper time arrives to treat them. Do not open such hives nor handle the combs unless absolutely necessary, and then use care that no robber-bees get a chance to steal and carry off more or less of the honey. Besides, even though not treated at all the first season the disease begins, the profits of the apiary may not be materially diminished.

As a rule, this disease makes but little headway until after the first season. But it is by no means pleasant to have foul brood in one's apiary, and hence it is the way to get rid of it the same season it is found to exist. The disease does not seem to me to be as dangerous or as virulent as when it first became known in the United States, but this may be owing to the fact that experienced bee-keepers discover it sooner and know better how to manage such colonies as become infected. The main danger among novices is that they do not know the disease, and hence do not discover it in its first stages, and thereby scatter it among the healthy colonies by changing the combs about from one hive to another. —*Bee-Keepers' Review.*

St. Charles, Ill., Nov. 30, 1907.

[We have been requested to republish the foregoing article by Mr. Baldridge, as it gives in detail his method of treating the disease of foul brood among bees.—EDITOR.]

No. 9.--Bee-Keeping in Colorado

BY R. C. AIKIN.

Number 8 left us with the taking off of the honey crop, and now we will consider the other stages of its progress to market. It is a big problem to produce successfully; the marketing is also no little question, I mean successful marketing.

Years ago the getting of the Colorado product to market, when we had a surplus to go out of the producing district, was indeed a serious matter. Local and all less car lots must be risked to the rough handling usual to such shipments knocked about here and there, and the distance, if sent out of the State, was great and rates high. We had but one feasible way, and that was to ship by car-load; that meant that one must be an extensive producer, or there must be co-operation among ourselves. To get a given number together, to get them to agree on prices, terms, etc., and to be all ready at one time was almost impossible. We were hitched to a stump, and there we were with always enough balky mules to leave the stump fast.

The next alternative was to sell at home and do the best we could, or take the risk on less car lots and tricky buyers. I do not mean there was none on our side tricky, nor that all on the buyers' side were tricky, but enough of both to put the better of both at great odds.

After years of struggle we hit on the plan of a co-operative stock company, having many strictly co-operative features, but the business in the hands of a manager with the advice of a board of 7 directors. We then had the problem of establishing our association in the business world and making a reputation, as well as to learn how to deal, how to clean, grade and pack our product. The work of the association, together with its methods, is before the business world, and it is not necessary to detail those matters here. But *some* of the developments and methods do come right in here, especially the cleaning, grading and packing, that is a general subject, and applicable wherever honey is produced. Where every man is a law unto himself there are as many sets of grading rules as there are individuals concerned. And even when several do combine and try to do the same thing there will always appear the several individualities in their product.

It is essential, then, in preparing the product for market, that there be an effort to attain to uniformity as far as possible. If one be an individual producer and so situated that his product goes direct to a customer who knows the individuality of that particular producer—in other words, if you sell direct to a customer whom you know, and above all who *knows you*, you can be an independent grader; but if you sell with others, and the product goes to customers who do not know you or your associates, then you cease to be an independent producer, but you are a Colorado—or a Colorado Honey-Producers' Association producer—you cease absolutely to be John Smith, and are exactly what your associates are; the company becomes as one person, every bit of the product has to go on the market either by direct inspection and acceptance on the part of the purchaser, or upon the reputation of the association or middlemen.

The Colorado Honey-Producers' Association has gone through this very experience, Colorado producers have banded together, losing their individuality, merging the same into the association, which in turn has established its individuality and reputation in the business world, and on the other side educated its members up to more careful and uniform grading, and so put into practice a co-operative system of marketing. As it now stands, any individual producer who can and will prepare his product so as to be acceptable to the Association, and puts his goods there to be disposed of, has practically the opportunity of a nationally wide market for his honey, although personally he may not be known outside his own neighborhood. This is not an advertisement for the Association—it does not need it, for it has fought the battle and won. An examination of commercial agencies will prove that to any one disposed to inquire. But it does concern producers of Colorado and all districts isolated—communities in remote districts, and all who have to market in the general markets and come under general trade conditions. The subject is a vital one of common interest.

The producer, then, must not think he is simply *it*, and can "buck" the world and grade and sell as he pleases; if he does, he will not please anybody, and himself least of all. Put yourself in touch with your fellows. Find out what others are doing, compare notes, get the grading rules, and in every way try to get your product up just as good as you can; get it so it will fill the standard which buyers are asking for and expect in honest trade. I will not try to give you any rule of my own, but put before you a set of rules which are the product of the wisdom of some of our very best and most extensive producers, worked out after much individual and collective experience. We had a set of rules for several years, and tested them perhaps more than any set of rules in existence, then in the light of this large experience revised and improved them. These rules are not the rules of The Colorado Honey-Producers' Association, but of THE COLORADO STATE BEE-KEEPERS' ASSOCIATION. It is true these rules are used by the former organization, and that a very large percent of the producers who figured in their working out are its members, yet they were made and adopted first and officially by the State organization.

I most surely believe that successful marketing, that will mean not only success to the party immediately concerned, but to all others interested, is co-operatively carried out.

The following are the

New Comb Honey Grading Rules

adopted by the Colorado State Bee-Keepers' Association:

NO. 1 WHITE

Sections to be well filled and evenly capped except the outside row, next to the wood; honey white or slightly amber; comb and cappings white and not projecting beyond the wood; wood to be well cleaned; cases of separatored honey to average 21 pounds net per case of 24 sections, no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 1 LIGHT AMBER

Sections to be well filled and evenly capped, except the outside row, next to the wood, honey white or light amber; comb and cappings from white to off color, but not dark. Comb not projecting beyond the wood, wood to be well cleaned.

Cases of separatored honey to average 21 pounds net per case of 24 sections; no section in this grade to weigh less than 13½ ounces.

Cases of half-separatored honey to average not less than 22 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 23 pounds net per case of 24 sections.

NO. 2

Includes all white honey and amber honey not included in the above grades. Sections to be fairly well filled and capped, no more than 25 uncapped cells, exclusive of outside row, permitted in this grade; wood to be well cleaned. No section in this grade to weigh less than 12 ounces.

Cases of separatored honey to average not less than 19 pounds net.

Cases of half-separatored honey to average not less than 20 pounds net per case of 24 sections.

Cases of unseparatored honey to average not less than 21 pounds net per case of 24 sections.

REMOVING AND HANDLING FILLED SUPERS.

Comb honey should be taken off as soon as completely capped, no more smoke than necessary should be used, and the smoker kept well filled with fuel so no ashes will blow out and spot the cappings. If finished supers are stored in the honey-house, one or several sheets of new paper should be used between supers, to catch any possible drip and keep out dust and ants.

NAILING AND MARKING CASES.

Cases should be well nailed with cement coated nails, and glasses perfectly clean. If edges of covers and bottoms project they should be planed off; if this is not done many boards will split in shipping. The whitest, smoothest boards should be reserved for the covers, and the others used for bottoms. The paper tray in the bottom should be evenly folded, and drip sticks secured in their proper places by the use of a little glue or thick honey on their underside. Nail cover on firmly when case is filled.

The mark of the grade of honey should be put into *both handholes* of the case; *X stands for No. 1 white; one dash for No. 1 light amber, two dashes for No. 2.* The marking of filled cases should be done before they go to the storage pile.

Second-hand cases should only be used for the casing of cull honey, never for the shipping grades.

CLEANING AND CASING HONEY.

This work must be done in a well-lighted place, and a large bench or table provided for it. The shipping-cases to receive the honey should be placed so as to face the packer, and should be arranged so no propolis from scraping will fly into them. It is desirable to have several cases for each grade on the bench, so that honey of the same shade and finish may go in the same case. A definite place should always be used for each grade to avoid errors in casing.

An accurate spring scale should be handy to weigh doubtful sections.

The practice of piling honey on the bench before casing is not recommended, as honey is more subject to injury, and time is lost in casing. It is desirable that the packer should have a copy of the grading rules hung up before him for ready reference, and where this work is entrusted to others the apiarist should provide specimen sections representing the poorest of each respective grade, and give strict orders that anything inferior to these samples must go into the next grade below.

The face of each case should be of uniform color and finish and truly represent the contents of the case.

CULL HONEY IS COMPOSED OF THE FOLLOWING

Honey in badly stained sections, caused by leaky covers.

Honey that shows signs of granulation.

Sections that are leaking or where the cappings are injured.

Sections that are fairly well capped, but have more than 25 open cells.

Sections that are capped, but weigh less than 12 ounces.

All cull honey should be marketed around home, or rendered.

HAULING OF COMB HONEY.

The proper time to haul and ship comb honey is while the weather is still warm, therefore no time should be lost in getting the crop ready. In hauling by wagon, it is desirable to provide springs for the wagon bed, and if these cannot be had, a layer of three or four inches of straw should be used in the wagon; on top of this should be spread a canvas or large wagon cover in such a way that after the wagon is fully loaded the canvas will fold over the top of the load, thoroughly protecting the honey from dust or a possible shower.

The bed of a regular farm wagon will take 96 cases of honey. A good steady team and careful driver are required to haul comb honey safely.

Our Bee-Keeping Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Discouraging, But Not Despairing

A season of dearth, when instead of storing honey by the ton the bees spend their time chiefly in stinging and robbing, does not make the bee-keeper's path one strewn with roses. A season of struggle with foul brood is several times worse. Combine the two—dearth and foul brood—and you may have some idea of what we've been going through "in this locality."

Editor York, in the August number, speaks of honey-dew spoiling our white honey. That's altogether too rosy a view. We would be glad to have the white honey spoiled by honey-dew if we could only have enough white honey to be spoiled. A few of the strongest colonies have done something in sections. Up to date we have had one section of darkened honey—the one Editor York sampled when here. If all honey-dew were as good, there would be little cause for complaint. Dr. Miller thinks it more palatable than the average fall honey.

We are still in hopes that the fall flow may fill up the hives for winter. Never despair.

"John" Helps---In the House

I believe in giving due praise to my John, who very kindly and patiently will help me about any work to be done for the apiary if done in the house, away from the bees. If there is to be a super made, I measure the hive, and John will make it; but that is about all the help I get. If John was not so afraid of a bee, and was as enthusiastic over the bee-business as I am, I am sure we could make a lot of money. However, I made good for the year of 1908, and am trying for 1909 on 10 colonies. I will report later.

OHIO BEE-WOMAN.

Honey and Almond Cake

Put two cupfuls of extracted honey in the sauce-pan with three-fourths pound powdered sugar. Cook two or three minutes; add a quarter pound almonds, chopped, and cook five minutes longer. Now add enough flour to make a stiff dough. Take from the fire, and when slightly cooled add eight ounces candied orange peel, cut fine, the yellow rind of a lemon, a half teaspoon each of ground cinnamon and grated nutmeg, a half teaspoonful soda, a pinch of salt and a glass of grape juice. While the dough is still warm roll thin and stamp into little rectangles. Bake in a moderate oven and, when cold, ice.—*Chicago Record-Herald.*

Thoughts on the Bees

A queen, a drone, a worker-bee,
Much honey, and a market, too;
Enough for all, and more to see
Round about the place, and lots to do
In the apiary and the town,
Coming home all laden down
After a splendid honey-flow,
No man should have a kick to come

Because he's sticky and stung, you know,
Every one of us has to have some—
Every bee you must now, remember—

Joyfully give you all her toil,
Oh, of your family every member
Up and doing, like them should be,
Round about the hives, and honey-juice,
Now helping parents with their bees,
And with field and garden produce,
Long live the queen, long live you all.

Vancourt, Tex. M. E. PRUITT.

[As a specimen of verse, the above contribution to the Sisters' department can by no means be considered perfect. But the ingenuity displayed in making the first letter of each line spell out something in which we are all so much interested, ought to atone for all shortcomings in versification.—EDITOR.]

A Bee-Woman's Dress

The matter of dress is, and perhaps always will be, one of chief interest for all the daughters of Eve, the bee-keeping sisterhood not excepted. This difference, however—womankind in general give first thought to looks in dress; bee-keeping womankind, while not despising the matter of looks, give more thought to comfort and security againt stings. This month we can have before us the views of two sisters from opposite sides of the ocean.

First, from a German sister, Clara Meller, in Rheinischen Bienenzeitung, we have the following:

The material of the dress must be wash-stuff, and must be well starched that it may not cling to the body. Under the skirt, which clears the feet, is worn a pair of closed drawers, fitting snugly at the tops of the shoes with rubber-tape. The sleeves of the blouse must fit tight about the wrists with rubber, the blouse coming high up on the neck. Then bee-keepers' gloves (Imkerhandschuhe) must always be worn; one works more peacefully and securely, especially if one has many colonies to care for, and many swarms accordingly to hive.

Now comes the chief thing—the head. We are often quite too beautiful if we suddenly have a thick cheek, lip or nose, and have to bear not only the pain, but generally the ridicule as well. I always wore the customary veil, which, however, leaves much to be desired. If it is windy, the veil is blown tight against the face. If I pinned it to my blouse the bees still found places to get through and flew back and forth before my eyes, sometimes when I stood high up when after a swarm. Others may be cooler blooded than I; such a thing easily stirs me up. So I made a practical veil which I can recommend to all the sisters.

It is 45 inches wide and 22 inches long. A hem is made at the top, and another at the bottom. Through the upper hem is run an elastic, which hugs tight about the hat-crown. Through the lower is run a draw-string which fastens around the waist. Eight inches above the lower edge is sewed on a narrow strip of net, through which passes a hoop of hat-wire. The veil accommodates itself easily to the movements of the head; we feel quite secure, and can hive a swarm as boldly as our brethren, the dear men. Yes, what would the dear men do without us women?

Next, from an American sister, Miss Emma M. Wilson, we have the following in Gleanings in Bee Culture:

A suit made of duck, linen, gingham, or calico is all right, and a shirt-waist with some light-weight worsted skirt made of the same material as the dress. If made full, in very warm weather you need not wear any underskirt; also a pair of leggings, starched stiff, to reach from your shoes to the divideds kirt.

Eight-year-old Miss Verna Holman, of Freeport, Mich., holding a swarm of bees.

Pull the divided skirt well down over the leggings so no adventurous bee can find its way inside.

Of course the divided skirt is finished at the bottom with an elastic. If it's too much bother to make the linen leggings you can buy a pair of canvas leggings, army style, and cut them over to fit you; but they are warmer than the home-made linen ones, and one is about as safe from stings as the other.

Sew a pair of white sleeves to the tops of your gloves, having them long enough to reach well up over your shoulders. The sleeves cut from men's wornout shirts, if the sleeves are whole, do very well and save making. If not long enough you can piece them out. Have the sleeves fit rather closely around the shoulders, so the bees cannot crawl inside. Fasten them together in the back with a piece of white rubber tape an inch wide and four or five inches long, sewing each end of the tape to a sleeve. Fasten in the same way in front, only, instead of sewing one end of the tape to the sleeve, work a buttonhole and sew a button on the sleeve. In this way your sleeves and gloves can be slipped on or off quickly, and are perfectly safe so far as stings are concerned. A big apron one made of denim is good, if you don't think it too warm, with a couple of good-sized pockets, finishes up the suit.

Now, if you have a good bee-hat with a veil sewed securely on the edge of the brim, and a rubber cord run in the bottom edge, and pull the veil down taut in front, and fasten with a safety-pin, I think you may feel pretty secure as to stings, and not suffer very greatly from heat, either.

Nut Honey-Cake

M. Bourgeois gives the following recipe in the Bulletin d'Apiculture Romande:

1. Take 100 gr. (3½ oz.) of nuts, well skinned and pounded; 300 gr. (10½ oz.) of liquid honey; six eggs, the whites of which must be beaten to a froth; 100 gr. (3½ oz.) of sifted flour. 2. First mix the yolks of the eggs with the honey so as to well incorporate them. 3. Add while stirring, little by little, the flour, then the nut, and lastly the beaten egg-froth. 4. Butter a mould, place in it the paste, and bake in a slow oven for half an hour.—*British Bee Journal.*

A Poor Quality of Honey

At this date (July 19) there has been a very poor quality of honey stored. The bees do not seem to work on the white clover. White locust bloomed very full, and honey stored from that was dark, the quantity was all right, but the quality necessitates a low price, almost having to give it away, which is very discouraging to "Ohio Bee-Woman," who depended upon the proceeds of the apiary for a few fine clothes. However, I shall not give up.

OHIO.

A Brother's Mother Gone

A note from R. B. Perry, of Tennessee, speaks very feelingly of the loss of his mother who had been so much of a help with the bees. Yes, these dear mothers, how we miss them when they are gone, and how glad we then are of any little act of kindness shown them during lifetime.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Selecting a Good Queen Before Testing

It would seem from what has been written on queen-rearing, how to select good queens, etc., that there is but little left to be said or written on the subject. Still, all bee-keepers are interested very much in this subject, for more depends upon the kind of queen we have at the head of our colonies than any other one thing connected with successful bee-keeping. And to those of us who are trying to run one or more out-apiaries, it is of much importance to know what to expect of a young queen before taking her to the out-apiary to replace some failing queen, or have to keep her until tested. This is on the supposition that most of our honey-producers rear their own queens, as I do in the home apiary, and follow Dr. C. C. Miller's advice as given in "Forty Years Among the Bees;" that is, select all the very best colonies from the out-yards and keep them at the home; then select one of the *very best* of these select colonies to rear all queens from. By this method we stand a good show of having all our queens mated to select drones; and I fear this is as near having control over the mating of queens as we ever will have. Even this, though, if followed up with care and judgment, will give much better results than the average apiarist is in the habit of getting from his bees. I know this from having practiced it for a good many years myself.

I hope the editor and our readers will not look on this as a sort of free advertisement I am trying to get into the reading columns of this paper, for I wish it understood that I rear no queens for the trade, but only for my own use.

Now I will tell how I select good queens without waiting to test them: In making the selections I pay no attention as to color of the young queens, as I breed mostly from imported Italian stock, and many of my queens would be considered *black* by the average apiarist. The first thing I look for is to see that the queen is perfect in form; that is, has no crippled legs or defective wings. It is not necessary that she should be very large, that is, extremely large, neither would I tolerate a little, runty "squib" of a queen, but select one with a large head and broad shoulders (thorax), and her wings should be large, and stand out from the body. This, perhaps, you will say is old, and has been gone over many times in the past. Perhaps so, but this is not all. The surest way I have of telling a good queen is by the looks of her brood after it is sealed or capped over. Even if the patch of brood is not large, if it is as smooth as a dressed board on both sides of the comb, and every cell of exactly the same hight, with no missing cells, then I pronounce her all right, and I will not be fooled one time in fifty.

The point I wish to call special attention to is this: If the queen is weak, or in any way defective, the bees will not cap the brood with this smooth, "ginger-bread" appearance, as they will the brood of an extra-good queen.

The brood of a poor queen will have an uneven, rough appearance, some of the cells slightly higher than others. I don't mean by this that the slightly raised cells contain drone-brood, for that would be a sure sign of a poor queen; but some cells are slightly raised above the others.

Rescue, Tex. L. B. SMITH.

A Bee-Shed in Texas

The following letter has beon sent me for an answer:

> MR. SCHOLL—I would like your opinion of a shed for bees for shade, 12 feet wide, building it east and west, with 2 rows of hives facing north and south. How far apart should the hives be in the row to insure the safe return of queens? Do you think one could produce enough more honey to pay? Please answer in the American Bee Journal.
>
> C. H. MILLER.
>
> Crystal City, Tex., Aug. 13.

Regarding bee-sheds, I have always had my doubts as to whether it would pay to build them. First, they are expensive, and must be kept up, and, second, because the shade made by them seems too dense for the bees to do their best, especially the bees on north side. *I* prefer natural shade, where it can be had, and that which is not too dense. Live-oak trees are condemned by me, while I do like the partial shade made by our mesquite trees, of which there are a plenty in your locality. This does away with the expense of building sheds, and with my now 20 apiaries and more developing, this would be quite a large expense. Then, later, the repairs on them would be no small item, which, however, is only too often neglected. And from the few bee-sheds I have seen, which were all the more or less neglected, they became the most abominable places in which to keep bees, but were just ideal dwelling places for spiders, wasps, and numerous other vermin.

There has been only one reason why I should like to have a shed for my bees, and that is, that it would enable me to use a hive-lifting device which I have had in mind a long time. Something very similar has recently appeared in Gleanings in Bee Culture. I would have two rows of posts, however, and then I would arrange for the two scantlings running along the upper end of the posts. Cross pieces to hold the whole together should be put on, and rafters with a ridge-pole to finish the frame. The carrier can be attached on another scantling just far enough from the inside of the shed so as to hang over the roofs of the hives.

Instead of making a solid roof over

the whole, I should use mesquite brush, tying this to the scantlings with wire. Some of these have been described before, and are shown in "A B C of Bee Culture." Such a shed would give a partial shade only, could be easily repaired at any time, and would not be very expensive. I would build one of these, were I to do so, mainly because I could then make use of my hive-lifting device, as Mr. Burgiss does.

The shed should be built so as to run northwest to southeast, so the hives face northeast and southwest. In this way the hives on one side get at least some of the morning sun, and the noon sun does not strike the hives squarely as when the shed runs east and west. In this case those on the north side would never be reached by the sun at all. All hives which must face in a southerly direction, in a hot climate like ours, should, if possible, be shifted to face due southeast, so that the hottest sun at noon strikes the corner of the hive. This I have found the best way to face my hives.

In the rows I would arrange the hives in twos. Each pair should be 6 inches apart, and the pairs with 18 inches between them. It is impossible for me to say whether one could produce enough more, if any more, honey under one of these sheds to make it pay. That is to say, if we compare the bees so situated with those under some natural shade under the same conditions. Where there is no natural shade, it of course would pay, over bees kept right in the broiling sun. Besides, I would prefer such a shed to shade-boards on the hives, because, first, these are a nuisance and always in the way, and the operator must work in the broiling heat of the sun. The shed would be the better in this case.

* * *

Apiarian Exhibit at the Texas State Fair

As superintendent of that department of the Texas State Fair, which takes in all that pertains to our industry, it is my aim to have this year the best exhibit of its kind ever shown in the South. We had a splendid showing last year, but wish to surpass it exceedingly the coming Fair. But we must have the material from the bee-keepers, and I urge that all those who can will send liberally to help us. Write for any information and what you have, or how much space you would need, and I will write you gladly. But write at once. Here is our premium list—over $350 to be awarded:

Golden Italian bees and queen in single comb observatory hives	$ 5	$ 3
Three-banded Italian bees and queen in single-comb observatory hives	5	3
Carniolan bees and queens in single-comb observatory hives	5	3
Caucasian bees and queens in single-comb observatory hives	5	3
Cyprian bees and queens in single-comb observatory hives	5	3
Holy-Land bees and queens in single-comb observatory hives	5	3
Banat bees and queens in single-comb observatory hives	5	3
Black queen and bees in single-comb observatory hives	5	3
Best display of bumble-bees	5	3
Best display of ground-bees	5	3
Best and largest display of bees or various races in observatory hives	10	6
Best and largest display of queens of various races in mailing cages	5	3
Best case of white section comb honey, 12 lbs. or more	5	3
Best case of light amber section comb honey	5	3
Best and largest display of section comb honey	8	5
Best display of special designs of comb honey	5	3
Best 12 lbs. friction-top pails white bulk comb honey	3	2
Best 6 lbs. friction-top pails white bulk comb honey	3	2
Best 3 lbs. friction-top pails white bulk comb honey	3	2
Best display of bulk comb honey	10	6
Best dozen jars white extracted honey	3	2
Best dozen jars light amber extracted honey	3	2
Best display extracted honey, granulated form	5	3
Best and largest display of extracted honey	10	6
Best sample cake of bright yellow beeswax, not less than 2 lbs	5	3
Best display in special designs in beeswax	5	3
Best and largest display of beeswax	8	5
Best display of fruit preserved in honey	5	2
Best honey-vinegar, with recipe	3	2
Best collection of Texas honey-yielding plants, pressed and mounted	5	3
Best instructive display in apiarian products and of the various uses made of honey and beeswax	20	10
Best and largest display of bee-keepers' supplies	Diploma	

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Money in Your Pocket

Allow me to suggest the way to invest a dollar or two in such a way as to make big money on it. It's very simple: Buy a bee-book. A number of the questions in this number—it's pretty much the same in every number—show that those who ask the questions have nothing in the way of a text-book on bee-keeping. Please don't think it's because I'm too lazy to answer your questions that I say this. After you've done your best at studying the books there will still be plenty of questions that will come up in your individual experience, but in the book you will learn a lot of things that you would never think to ask about.

If you get a book and find it was a mistake to have done so, please write me a savage letter, blowing me up for giving such advice. Then I'll apologize in the most humble manner for misleading you. But you will be the first one who has ever felt hard at me for giving such advice. C. C. M.

Some Queen Questions

1. How long will it take after a queen is hatched for her to mate?

2. How long will she be on her mating flight?

3. How soon will a queen begin to lay after being fertilized?

4. Do queens change their color and be much larger?

5. Will strange queens sometimes unite with a queenless colony? KANSAS.

ANSWERS.—1. Five days or longer.

2. She may be successfully fertilized on her first trip, and she may in some cases not succeed for more than a week.

3. Generally in 2 or 3 days, but she may be longer.

4. There is considerable change in the appearance of a queen. After she is 3 or 4 days old she is smaller than when she first leaves the cell, and will be larger after she gets to laying.

5. Yes, sometimes it happens that a young queen may go into another hive than her own.

Flax for Honey—Defective Brood—Honey-Dew—Removing Supers in a Slow Flow

1. Is the blossom of the variety of flax commonly planted in South Dakota nectar-giving enough to be classed as a good honey-plant?

2. I have a colony with a queen of my own rearing, from reliable stock. She was introduced about 2 weeks ago in a laying condition. Her laying shows all the ordinary signs of a good, prolific queen. In spots here and there there will be cells of mature brood with the cells built out as if the inmate was a drone, but they are never entirely sealed. All the inmates of these unsealed brood-cells seem to have died just about capping time, and at first they have two black spots on either side of the head, and gradually decay. The decaying brood is always dry, crumbling after a time, and never giving any scent. What is the trouble?

3. How can one determine the existence of honey-dew in comb honey?

4. What should good, strong disease-free colonies of black bees and hybrids in 8-frame size *box*-hives be worth in the fall?

5. Do you keep any particular strain of bees?

6. Would it not be better in a year like this, when the honey is coming in so slowly as this year in August, to remove the supers to encourage the storing of honey below?
ILLINOIS.

ANSWERS.—1. I don't know. Perhaps some one there will tell us.

2. That's a new one on me. It's all easy enough at the start. Often brood is not sealed over. I think because of wax-worms, but when you say the young bee dies, dries, and crumbles, that beats me. Never heard of it before. Send sample to Dr. E. F. Phillips, Agricultural Dept., Washington, D. C.

3. Perhaps $2 or $3 a colony.

4. By its dark color and its taste, although some floral honey is dark and tastes bad.

5. My bees are Italians and mostly hybrids.

6. No, the bees will fill up below first.

What Insect Is It?

What kind of insect is it that I have sent you in the box. I found it on a sunflower; it makes its appearance every year, and catches quite a few bees by its sword-like tusk, which it thrusts through the bee's body. PENN.

ANSWER.—I have looked very carefully through Prof. Cook's full list, and find nothing to tally with the specimen you send. Possibly Prof. H. A. Surface, of Harrisburg, Pa., might help you out.

A Queen Experience

I have purchased 2 queens at different times. The colony to be requeened was the common black bee. The queen was killed and the cage containing the new untested queen was placed on the top of the frame as per the enclosed instructions. In 7 days I looked in the hive and saw a queen-cell which I cut out, so I supposed she was killed. I did not look farther. I gave the colony an untested queen of my own rearing, with the wing clipped. I looked in a week and saw a queen-cell started, but no brood. As I had bought a new queen for another colony, I removed the black queen and just let her run in the former hive No. 1. Later I secured another queen for colony No. 1. In looking for the black queen in colony No. 1, I was surprised to find the Italian queen—unclipped—laying, and I supposed it to be the queen first introduced. I looked at colony No. 2 in a week and found 6 fine queen-cells. I fed colony No. 2 pint of syrup every evening. In feeding I thought they would probably receive the new queen better. After I made a mistake in No. 1. I looked more carefully through No. 2, and found her laying eggs in one side of the hive and the queen-cells were on the other side.

1. Does the above often occur when no honey is coming in, while untested queens are introduced?

2. Would the queen have destroyed the cells if they were not destroyed by me, or would they have superseded the queen?

This is a very poor year—not enough honey for bees to live right. Ohio.

Answers.—1. Yes, when a new queen is introduced, of course she can not lay while she is in the cage, and even after she is out of the cage she does not lay for several days. This state of things makes the bees get busy starting queen-cells, so as to make sure of having something that will lay eggs.

2. The cell would probably have been destroyed by the bees or the queen, but possibly the queen may have been superseded.

Honey-Dew

I put some supers on my hives in June, and the 26th of July I looked to see if they had any honey in the super, and I found a whole lot of black honey, about 30 pounds, which is a good bit for one colony this year.

1. Will this black honey, which most people call honey-dew, hurt the bees if I winter them on it? It is not fit to eat, and I wondered if it would not hurt the bees.

2. Will the bees gather such stuff? Do bee-keepers know anything about it? I am afraid that I will have to feed my bees if there is not a fall honey-flow. Ohio.

Answers.—1. Honey-dew is not generally good for winter stores.

2. Honey-dew is not always alike. The probability is that the disagreeable kind you have is the secretion of aphids, or plant-lice

Hive-Location—Caucasians, Carniolans and Banats

1. Which is best for fancy comb honey by the complete Danzenbaker system, an exposed sunny location, or a sheltered valley on which the sun shines only part of the day?

2. Can the queen be taken from a swarm at the time of hiving and a valuable queen introduced? If so, what is the method of procedure?

3. Do Caucasian bees cap their honey whiter than other bees, as a rule? Two colonies I have certainly do, and store more of it also.

4. I would like your opinion of Carniolans and Banats also, for fancy comb honey. California.

Answers. 1. Not sure I know; but I'd take my chances on the valley, other things being equal. I don't know, however, that the Danzenbaker system would require a different location from any other.

2. Yes, in a queen-cage the same as an introduction at any other time. But the swarm might object to remaining with a strange queen in a cage. A frame of brood would help matters.

3. Your 2 colonies are probably fortunate exceptions. Still, something depends upon what your "other bees" are.

4. I have had no personal experience.

Removing Crooked Honey from Hive

Sections I ordered did not come for 7 weeks. Honey was coming in, and the bees filled the empty supers with honey in all sorts of shapes. Running a bread-knife under the cover I cut the honey loose from the cover, and put sections on the top. Bees have not done a great deal since, but the puzzle is to get off that crooked honey without killing a lot of bees. Can you help me out? Ohio.

Answer.—Pry up carefully the lower super, blowing in a little smoke, and if the honey is attached to the tops of the frames you must cut in the same as you did to get the cover off. Understand that in doing this you leave on the cover and the upper super. If you have cut any comb so as to set honey to running, let down the super again and let all stand quiet for an hour or so to let the bees clean up the drip. Take off the cover and blow smoke down from above, so as to drive down a good part of the bees. Now take off both supers together. There will still be bees to get out. You can set the supers in a cellar that is darkened only in one little spot through which the bees can get out, put the supers so far from this spot that the bees can not find their way back in the dark. Or, put the supers in a big box outdoors, cover over with a sheet, and as the bees gather on the sheet from time to time turn it over to let the bees out.

Bees Act Queerly

The weather is very hot and sultry at this place, and about the hottest part of the day from noon until 4, there is a peculiar condition present among some of my bees. A part of the bees issuing from the hive seem to be unable to fly. There are no outward signs of any ailment, but they seem to have no wing-power. They crawl about for something like 5 minutes, and then after having made many vain attempts, they fly away. This condition affects different colonies at different times, and never more than 2 or 3 at once.

Missouri.

Answer.—That beats me. Sounds a little like paralysis, only if it were paralysis the bees would hardly fly away after crawling about. Moreover there is a peculiar trembling in paralysis, and you make no mention of this. Bees that are kept too close and become somewhat suffocated, act somewhat as you say. It is barely possible that the hive-entrances are not large enough, and then the trouble comes in the hottest time of day.

Milkweed—Requeening

1. I enclose what we call milkweed. The bees work on it hard. A magnifying glass shows a sticky substance on it. Is it a good honey-plant?

2. Why do bees stick to it?

3. Why do bees act as if they were intoxicated?

4. I have found some dead drones on the flowers. They seem to stick, and cannot get away.

5. What month is best to requeen? The bees seem to be crazy. Wisconsin.

Answers.—1. Yes, except for the trouble you mention in next question.

2. The pollen-masses get fastened to their feet and stick so tight that the bees pull them from the plant and carry them away.

3. Not sure what you mean. Perhaps tumbling about on the ground. They do that when they have paralysis.

4. No, they do not have too heavy a load. They are probably on the milkweed, held fast there in the way already mentioned.

5. No better time than last of harvest or later

Feeding for Winter—Bee-Books

1. I will have to feed my bees. What should I feed, and how often?

2. If pollen is short, what can I give in its place?

3. In putting in comb foundation, where should it be placed when first put in?

4. Would "A B C of Bee Culture" be as good a bee-book as I can buy? If not, please mention another. North Carolina.

Answers. 1. Sugar syrup should be fed until the bees have all together in the hive about 30 pounds of honey and syrup. For full particulars see your bee-book.

2. You can hardly give in the hive anything to take the place of pollen, but you can feed in boxes, in the open air, some substitute. Rye-flour is used—all the better if unbolted. You can use corn and oats ground together, and after the bees have used the fine parts, the balance may be fed to stock.

3. I suppose you mean when the hive already has some combs, in which case put the foundation between the combs.

4. Yes, it is good. Also Dadant's "Langstroth," and Cook's "Manual." After you have one or all of these, you can get Hutchinson's "Advanced Bee Culture" and "Forty Years Among the Bees."

Italian Bees—Moving Bees—Other Questions

1. Are the Italian bees cross? Are they large bees?

2. I will move my bees this fall about a quarter of a mile. Will I lose many by their returning to the old location?

3. I winter the bees on the summer stands, and I never lose to amount to anything. Will snow smother bees when the hive-entrance is full? I always keep it clear from snow and ice

4. I leave some comb honey on each colony all winter. Is that a good idea? My bees all face the southeast, and have no shade at all.

5. In moving my bees a quarter of a mile I will put a board in front of each hive for them to bump against. Will that do any good?

6. Is it best to take honey off as soon as the super is full?

7. Will a queen sting if you don't mash or squeeze her?

8. Tell me what to do with a cross colony of bees. I have one that will attack me a hundred feet from the hive?

9. What makes bees cluster on the outside of the hive? They have room. Only one lot does that. Illinois.

Answers.—1. No. Italians are considered good-natured, but the cross between Italians and blacks is vicious. You will see no difference in size.

2. If moved at a time when they are still gathering, a good many will return to the old place. After honey ceases to yield, very few.

3. Soft snow at the entrance will do no harm. If it becomes partly thawed and then freezes into ice that prevents the entrance of air, it is bad.

4. It's all right for the bees, but bad for sections, if you leave it in that shape.

5. Yes.

6. Yes, if it is comb honey. The comb becomes darkened, and it does not sell so well. But the taste of the honey is as good as that in the whitest comb, perhaps better.

7. No.

8. Give it a queen of gentler stock.

9. Likely the colony is very strong, the hive pretty close, and the weather hot; so they cluster outside where it is more comfortable.

Why Loss of Queen?

1. Some time ago I received an Italian queen, and introduced her successfully. On removing the empty cage and finding her laying, I clipped her wings very closely. After 18 days I went to the hive and found young bees hatching. No unsealed brood, numerous young drones, and a virgin queen in possession of the hive. Do you think that clipping the queen's wings caused supersedure? If so, what explains the presence of the Italian drones in the colony?

2. Is it probable that I killed the queen in replacing the frames, or would that conflict with the presence of drones? Louisiana.

Answers. 1. The queen may have been killed, not because of the loss of wings, but because of strange odor from handling, or merely because of the disturbance. Nothing strange about the presence of drones. They may have been from the previous queen, or from the new queen

2. Possible; hardly probable.

Disinfecting Combs—Bait-Sections

1. What is the best method to treat brood-combs, so as to be doubly sure that there will be no chances of foul brood getting into the apiary from those bought brood-combs, as I have a chance to buy old combs.

2. How would you treat sections partly filled, or how would you use them in the supers? On the outside rows, or in the center as baits? I have no extractor to extract these bait-sections in the fall, so have to keep them until spring for baits and feeding. Some years I am caught with a lot of them on my hands. Last spring I put a lot of them in the supers that had the honey granulated, and put the top side of the section down, so as to get the section built out at the top and bottom. The bees did it, and this granulated honey left a dark color in the center of the section. New York.

Answers. 1. I don't know of any way. At one time it was claimed that formaldehyde would disinfect them, but I think that is given up. Your only safe way is to buy them where you *know* there has been no disease.

2. As soon as the harvest is over, get the bees to empty them out, covering them up so that only one or two bees can enter at a time. Then the bees will not tear them to pieces. Some put them around the outside of the super. I prefer them in the center.

Feeding a Weak Colony—Winter Hive-Ventilation

1. An old bee-keeper told me a good way to feed a weak colony of bees through the winter, was to make a thick syrup and then take rye flour and mix it up until it was as thick as putty and lay a big bunch on the top-bars.

He said that did them for both bread and meat. What do you think of the plan?

2. How much sugar will it take to winter a fair colony?

3. How well have your bees done this year? So far out of 25 colonies I have not got any honey. Only 4 or 5 pounds in sight yet. No white clover as yet.

4. Last winter I used some board sealed covers over the brood-chamber which were tight, and I lost several colonies. I am now making a ventilator hole 2x8 inches in the same covers, with wire-screen over the hole, and will lay some old carpet over it. How do you think that will work to let off some of the hot air? Will it keep the combs from molding as badly as they did last winter? I have a ¼-inch space over the top-bars so that the bees can go over from one to another. INDIANA.

ANSWERS.—1. Better leave out the flour. Although they might do with it, they will do better without it. When they begin to rear brood in the spring, then they will need something as a substitute for pollen if they have no pollen. Better feed the sugar syrup as early as possible, so it will be in good shape for winter.

2. About 30 pounds of honey is counted the right thing. As 5 pounds of sugar and 2 of water make a syrup about as strong as honey, you will feed about 22 pounds of sugar to equal the 30 pounds of honey. Feed in August or September, giving a pound or a pint of water with each pound of sugar. If you feed later the syrup must not be so thin. But better feed early.

3. My bees are doing no better than yours. If there is "no white clover as yet" in August, you needn't look for any before next year.

4. It will probably work all right.

Location of Hives in the Apiary

I have an idea on which I would be pleased to have your opinion before trying it myself.

Place 4 colonies of bees as shown in accompanying diagram. Interchange at intervals of a week or 10 days (or longer, subject to one's opinion), as shown in the diagram. Continue same through the entire honey season. What, if any, effect will this have upon swarming?

Will this not have a similar effect to "shaking?"

Would bees coming in from the field loaded with pollen and nectar be molested?

Changing the location of colonies is to be done through the middle of the day, and while the bees are busy in the field. NEBRASKA.

ANSWER.—Continual changing of that kind would probably interfere enough with the plans of the bees to make swarming less, but hardly enough less to pay for the trouble. Bees returning from the fields laden would be kindly received, although there might be some trouble if a dearth should occur. Very likely the effect would be something like shaking, but will shaking prevent swarming? If it gives as much energy to a colony as some think, would that not be the very thing to promote swarming?

Italianizing—Rearing Queens—Swarming—Wintering

1. What time of the year is best to Italianize bees?

2. I wish to Italianize my bees, but do not want to buy more than one-half dozen queens and rear the rest. Could I do this as late as August or September?

3. In rearing queens where you have black bees, will not the young queens meet with the black drones?

4. What is the best way to rear queens?

5. How would it do to put queen-excluding zinc between the hive and bottom-board to prevent swarming?

6. When wintering bees on the summer stands, what is the best way to pack or fix them?

7. I have a stone basement under our house, but it is rather damp. Would it be a good place to winter my bees? KANSAS.

ANSWERS. 1 That depends upon when you ask the question. If you ask it in the spring, the answer is, "Don't wait till fall, but get in your Italian queen at least as early as the beginning of the honey harvest, so that you can breed from her the same season." But the right answer at the present time is: "The sooner the better, so as to have your new queen in a full colony in good working order next season early."

2. I'm afraid you'll find it rather late to rear queens by the time you get your new queens established, but by all means don't wait till spring to get the new ones. At the present time you'll get good queens for less money.

3. Yes.

4. It takes a whole book to tell that. G. M. Doolittle has written an excellent book on the subject, Doolittle's "Scientific Queen-Rearing," and he knows what he's talking about. In "Forty Years Among the Bees" you will find particulars of the way I rear queens for my own use. Also any good bee-book will tell about it.

5. It doesn't work.

6. There are almost as many ways as there are different bee-keepers. Use for packing what you have convenient—cork chips, leaves, planer shavings, rags, etc., having 3 or 4 inches on all sides except the front, which may have less packing or none, and 4 or more inches of packing on top, well protected from rain. A place well sheltered from the wind is desirable.

7. Dampness is not generally good, and yet with good ventilation and a temperature of 45 to 48 degrees you may have good success. At any rate it may do no harm for you to try part of your colonies there.

Putting on Supers—Colony Stopped Storing

1. When is the best time to put supers on—how early in the spring? Would you put on two supers at once, or wait till one is filled, and then put on the other?

2. I have one swarm that I caught last year which filled the room about half, and wintered all right, and seemed to do pretty well for about 3 weeks, but seems to have stopped while the other bees are storing honey in the super. What is the matter? IOWA

ANSWERS.—1. Don't put on supers till bees gather enough to fill their brood-chamber. About that time you will see bits of white wax at the upper part of the combs and top-bars. You are probably in a white clover region, and should put on supers as soon as clover is in bloom.

2. Hard to say what is the trouble without knowing more about it. Possibly the queen played out. They may have reared a new one and will come up later.

Getting Bees Out of Supers—Transferring—Keeping Queens—Queenless Bees

1. How do you get the bees out of supers when you are taking off honey?

2. Do you use a queen-excluder on your hives to keep the queen from laying in the sections? If not, how do you prevent this?

3. The bee-pasture I have is as follows: Several large orchards of fruit-bloom, then 20 to 50 acres white clover, 5 to 15 acres alsike, hundreds of acres of red clover, with lots of wild flowers. With this pasturage could I keep 50 to 100 colonies and make it pay?

4. How can I get the bees to build queen-cells when I wish to form a nucleus?

5. What is the best time of year to transfer from box to standard hive?

6. Where I wish to transfer and requeen on full sheets of foundation, should I let the old queen go in with the bees, or should I introduce the new one at once?

7. When one receives a queen by mail in an introducing cage, and does not wish to introduce her for a few days, how can he keep her from dying?

8. How long will a queen live in a cage on the frames above the cluster, where the bees have access to her?

9. I have 2 colonies that I know are queenless, and still they are busy carrying in pollen. Some say they will not do this when they have no queen. Is this so? If so, why do these carry pollen? MISSOURI.

ANSWERS.—1. First blow smoke lively for a little while on top to drive a good share of the bees down. Then, if honey is coming in a flood, the super may be set on end on top of the hive till the bees leave it. Generally this would start robbing, so the usual plan is to pile the supers up 10 to 15 high, put a Miller escape on top, and let the bees come out at leisure. You will find the matter fully illustrated in "Forty Years Among the Bees."

2. With *full* sheets of foundation in sections, and frames not too shallow in the brood-chamber, the queen so seldom makes trouble in the supers that I never use an excluder to keep her down.

3. No. That is, if your bees have only about an acre to the colony of white and alsike clover, for red clover hardly counts. But it's pretty safe guess that more than you have stated is in reach of your bees, for they spread out probably 2 miles on each side. At best one can only guess at such things, but I'd put my guess at more than 50 colonies.

4. Make a *strong* colony queenless.

5. When the bees swarm naturally. Hive the swarm in the hive desired, and 21 days later there will be no worker-brood left, and you can then cut out the combs and dispose of the remaining bees as you think best.

6. You may do either way, but the bees will be better satisfied with their new quarters if their old queen is with them.

7. Leave her in the cage in the house, being sure there is enough food present. It may be still better to put her in the hive where she is eventually to be introduced, only not allowing the bees of the colony to get at the candy to let her out.

8. I don't know. I never tried it more than 3 or 4 weeks.

9. Queenless bees do carry pollen; but after they have been queenless for a time they have a surplus of pollen on hand, and then they carry less pollen and smaller loads.

Foul Brood Origin and Treatment

I noticed your reply to "Michigan" on page 276. I will say that "Michigan" is not alone in his belief. His idea has been creeping in my gray matter for many years. I am not a scientific man, but I have great respect for it. If I am rightly informed, the germs of all diseases are in our system all the time, and are only waiting for the proper conditions to arise, when they will get the best of us. Then we are sick.

I think the easiest and safest way for you to handle your foul brood is to remove the queen, and when dark comes so no bees will possibly fly, take the hive in the shop and let the bees fly out of the window, having a bee-escape to it. When the brood is all hatched out, and the bees all out, melt up the comb. This is a perfectly safe plan, for there'll be no tinkering, and no bees will get any of the honey. I would like to have just one "fill" of nice white clover honey of this year's vintage. ILLINOIS.

ANSWER.—It is quite true that germs abound and are kept in subjection in a healthy body; but don't you think it's rather sweeping to say that germs of *all* diseases are in our systems? I am loth to believe that germs of yellow fever are keeping company with you and me. It is also true that some of the scientists across the water have said that the miscreant that causes foul brood is nothing but a common bacillus that is to be found everywhere. But Dr. Phillips and his "gang" at Washington don't tell us anything of the kind, and I've great faith that they know what they're talking about. They tell us that foul brood is due to a specific bacillus, and if I understand rightly it is *not* common everywhere. If it were, why did it never attack my bees till now? In my experience of nearly half a century, I feel sure that, especially in my first years, my bees were many a time in as good condition to be overcome as this year. Why didn't they have foul brood? Certainly they should have had it if the proper germs are everywhere present. But when the right seed came along, it grew and flourished, much to my sorrow.

Your plan of shutting up the diseased colony in a shop and letting the bees make their exit through an escape in the window seems to provide against spreading the disease, but I don't quite see how it will come out at the last. Of course you can furnish water, which bees must have, but what will become of the bees that have never flown to mark the old location? Will they be scattered about among the hives of the apiary, or will they stay clustered on the shop-window?

Drawn Combs—Queens Graded "Breeders"

I frequently need "drawn combs" in frames, and want your plan to get as many as needed—

1. At or around swarming season.

2. At any time during the "working season" that I may need them, up to October.

3. Best plan to get bees to enter supers.

4. How and when can I have extra drawn combs in supers of sections, and how late will bees draw out foundation? Having a good "fall flow," I would like to have sections drawn and ready for this, if I can have it done in June, July and August.

5. "Extra-select (queen) breeders." Prices run from "virgins" up to extra-select breeders. The grades up to breeders I understand; but the breeders and grades I do not.

a. What constitutes a "breeder" queen?, as used by queen-breeders?
b. How are they graded?
c. How are they produced, or reared?
d. Is there a standard rule for the grading—"breeders," select breeders, and extra-select breeders?

This naming of grades of queens is somewhat of a puzzle to a novice, especially here in the South where the "blind lead the blind." I read all in the bee-papers, but to some questions I find no answers to suit my needs. SOUTH CAROLINA.

ANSWERS.—1. There is no possible way to get bees to build combs only as they feel the need of them, and they always fill them up as they go. If you have any idea that you can ever get the bees to build *empty* comb, please give it up as an impossibility. Around the swarming season, when breeding is going on rapidly, if you put an empty frame between two frames of brood, you will get a comb built out—of course filled with brood, part of it drone-brood, unless you use worker foundation.

2. It can be done *only* when a honey-flow is on, by putting frames of comb foundation in an extracting-super.

3. Put in the center of the super a "bait," or section that had been partly filled the previous season, and then emptied by the bees. (See editorial page.

4. If you mean combs without honey in them, you can't do it. Bees will draw out foundation any time when they need additional room *when honey is yielding.* The only way you can have combs in advance for a fall flow is to get them filled with honey and then emptied—hardly a paying proposition.

5. Please don't give me away to the public, but I may as well confess that I too am puzzled to understand exactly what is meant by the different names. I don't know of any standard by which the grading is done. So far as I know, an untested queen that sells for a dollar or less is reared exactly like the extra-select breeder. I suppose the latter ought to be one that has been tested for at least a full season, its worker progeny having shown by the extra harvest gathered that it is an extra-good queen to breed from.

If any of those who use the terms can tell better just how the terms are used, I'll be glad to yield the floor.

A Queen Experience

A queen I ordered last spring came to hand the first week in June, and not being at home at the time, a brother bee-keeper near by made a strong colony queenless by taking the old queen with 2 frames of bees out of the hive, and thereby made a nucleus which left the old colony minus a queen, and put the new queen, cage and all, in between 2 combs and closed the hive.

The next day I came home, and was surprised as to what had been done with the queen. On the fourth day I released her, and was successful with her introduction. She was an extraordinarly good layer, but I found that she laid from 1 to 4 eggs in a cell, which did not hatch the first 2 weeks, but being patient with her, being the first queen to do that kind of work under my years of observation, and being busy with other work, and could not attend her, and so left her to her own good will, and the bees being contented, I was satisfied she was there all right.

July 15th I notice well-colored Italian worker-bees outside the entrance, which pleased me very much. On the 16th, for the want of more room, I transferred her from the 8-frame hive into a 10-frame hive, and saw her the first time since I had released her—a beautiful queen. Her progeny are well marked, from 2 to 3 banded Italian bees. I would like to have an explanation as to why her eggs would not hatch at first; and also as to laying so many eggs in each cell.

As far as I can see at present, she seems to be all right, and has a few frames well filled with brood from the egg to the emerging bees. They are very quiet under manipulation. I am anxious to know what success I am going to have with them in the future.
ONTARIO.

ANSWER.—I don't know. Bees do freaky things that are hard to explain. Sometimes a queen lays eggs that are all right, and the bees fail to hatch them. This is common in the fall. After a journey through the mails a queen is sometimes a little slow to get to work all right. She may for a time lay eggs irregularly, perhaps 2 in a cell. If a good queen is crowded for room she may lay 2 eggs in a cell, but your queen probably had plenty of room.

Reports and Experiences

An Extra-Fine Honey Year

I have 13 colonies, all doing well. This is an extra-fine year for honey—white clover in abundance. I have bought a Barnes circular saw, and made my own hives, and this year's crop of honey will pay for all expenses.
REV. JOS. DREXLER.
Norway, Iowa, Aug. 6.

Honey Crop a Failure

The honey crop here is a complete failure this year. This is my 13th year with bees, and "unlucky 13" it is. Only 400 pounds of dark honey-dew stuff from 60 colonies. Other farm crops are good.
EDWARD BLACKSTONE.
Cumberland, Ohio, Aug. 14.

Only One-Third Crop

Bees have not done well here this year. We will get only about one-third of a crop, and that will be buckwheat and heartsease. I have 25 colonies of bees, and have been keeping bees for 8 years.
RAY A. HAMILTON.
Iroquois, Ill., Aug. 25.

Not Half a Crop

The honey crop is no good—not half a crop, and lots of honey-dew. We have had but very few days of good weather this season. It has been cold and wet, and then hot and dry. There were very few swarms throughout the country. We had a good rain Aug. 3. If we get more soon the fall flow may help out some.
A. N. COOKE & SON.
Woodhull, Ill., Aug. 4.

Not Much Surplus Honey.

I don't think there will be much surplus honey offered from my locality. It has been too wet. Maybe we will get a fall flow from asters and goldenrod. Buckwheat is not producing much. Young white clover looks extra-fine. J. R. COOPER.
Spargursville, Ohio, Aug. 3.

A Good Swarm

I had a swarm of bees come out June 8. I put them in a standard hive, then filled the lower part and took off the super with 21 pounds in it. By July 18 they had stored about 75 pounds of honey. I would like to hear of a swarm that will beat it. I am just a beginner. GEORGE SHERREY.
Medford, Okla., July 25.

Bees Doing Nothing

Bees are doing nothing but loafing and waiting for the time to come to die. The honey crop is not nearly one-third as good as last year, and nearly all that I have is mixed with honey-dew. There have been but 6 days that bees worked on white clover, and the last 4 weeks have been too dry and hot. The farmers cut the sweet clover just when the bees want it. A. N COOKE.
Woodhull, Ill., Aug. 10.

Poor Quality of Honey

My bees are doing fine. Some of them have filled 4 supers. The Carniolans are storing more honey than the Italians. Last year and this it has been so. They build up sooner in the spring, and swarm sooner than the Italians. The honey they are bringing in is of very poor quality. It is honey-dew and very dark in color. They are not bringing very much now. I think the fall flow will be good here, as we have had so much rain this summer. Goldenrod, smartweed, and aster are growing everywhere. The honey all over this part of Indiana is very dark. I get 12½ cents a pound for it, or 12½ cents a section, at my bee-yard.

We had no white clover here this summer, but if nothing happens to it we will have the finest white clover flow next year we have had for years. We had a good white clover bloom last year, but it lasted only about 6 or 7 days. It got so hot and dry that it all dried up, but it left an abundance of seed on the ground, and some fields are white with bloom now, and bees are working on it fine.
Scottsburg, Ind., Aug. 2. E. C. MARTIN.

Fine Fall Honey Prospect

I have 36 colonies of bees in my home apiary, and we have 136 colonies in an out-apiary. We got about 2500 pounds of honey from the willow blossoms this spring. The home apiary I run for comb honey and the other for extracted. There is a fine prospect for a fall honey crop here. There are thousands of acres of smartweed beginning in about ½-mile from the home apiary, and the other apiary is right in the middle of it.
Shreveport, La., Aug. 24. B. V. COSTON.

About Half a Crop

I am delighted to read reports and experiences, so I believe I should write some also. I started bee-keeping in 1901 with one colony. Last spring I had 97 colonies. I run my apiary for comb honey. I have 4300 sections on the hives yet—about half of them finished. We will have about half a crop this year. The bees are not doing much now. White clover is about all gone. I winter my bees in the cellar. Swarming was very bad this year. J. C. DONAHUE.
Holbrook, Iowa, July 27.

Fairly Good Honey Season

Bee-keepers are scarce in this part of Idaho. I don't know of any bees in this valley outside of my own. I have 60 colonies. I started the season with 31. I have had a fairly good season for honey, and had considerable honey-dew. I depend altogether upon wild pasturage for the bees—buckbush, willow-herb, goldenrod, and asters; some white clover. No alfalfa or irrigation here as they have in the southern part of the State. Bees do not winter very well, as a rule, on account of the aster honey, I think, as they work on it very late in the fall. Of course, one could extract and then feed for winter stores, but that would be quite a job so late in the season.

The "Old Reliable" is a welcome visitor. I feel grateful to Dr. Miller and Mr. Doolittle for what they write. F. R. JORDAN.
Bonners Ferry, Idaho, Aug. 21.

Some Experience With Bees

I have charge of the Electric Light and Power Plant here at Princeton, but my home and apiary are at Kuttawa, Ky., and as I could not be with my bees at home, I had a colony in a box-hive there, so I transferred them and brought them to Princeton in April, and the first swarm that came out after I brought them here was when I was at home to spend Sunday. I love to handle bees so well I could not do without a few to pass the time with. I had a swarm come to me—a fine queen and about a pint of bees. I built them up to a fine colony, then took them to Kuttawa.

I keep my bees on the roof of the Plant, where they do not bother any one, and no one bothers them.

While at Kuttawa, in July, a man cut a bee-tree on Saturday night, and on Sunday I went and put the bees in a box. That night my mother went and got them, and Monday morning put them into a hive, and in the evening they came out and went into a hive next to them. It was a small swarm that had been hived about 2 weeks, and when I was home Aug. 2, they had 10 frames nicely filled with brood, and were working in the super.

On Aug. 2 I went home to spend a week, and cut a bee-tree. I got one of the finest and largest swarms I ever saw. They were in a limb of a big tree, and when the tree fell the part the bees were in split off, and I moved it out where I could get at it easily. Some of the combs were 3½ to 4 feet long, and from 5 to 10 inches wide. The bees were golden Italians, and as gentle as any bees in my home yard. I put them in a large box that night with the brood, and the next morning made a hive, fit the comb in the frames, and shook the bees in. All went well until about 1:30, and they swarmed out. I heard them coming out, and went to see what was the trouble. Having a queen-guard handy I put it on, but too late. The queen had already come out, but I was too wise for them. I had clipped her wing the evening before. I found her on the ground, put her back, and very soon the bees settled, and I smoked them, and back to the hive they went, but in about 5 minutes out they came again, so I let them settle and smoked them and they went back. I decided that they were hungry, for there was no honey in the combs given them, so I got some of the old comb with honey in it and fed them, and the next morning they were bringing in pollen and seemed contented with their new home. They had 15 or 20 pounds of honey in the tree, but the most of it was dark.

All the honey I have gotten at Kuttawa has been dark, but I have taken, from the 2 colonies at Princeton, about 30 pounds of light honey with a fine flavor. The dark honey has a fine flavor, too. The bees have gotten barely enough to rear brood since June 23 until about July 27, when they began to gain a little, and are now storing in the supers.

On page 264 Mr. L. Boombower seems to have had bad luck with 2 swarms with clipt queens, and has become discouraged; says he wants no more clipped queens. Well, for me, I want no other way but clipped queens. If I have a young queen, as soon as I find eggs I clip her, and all queens that I have must be clipped. I think it the only way to save swarms. L. S. Dickson.

Princeton, Ky., Aug. 16.

Not Quite So Large a Crop

In the August American Bee Journal the helper reported to Mr. Pryal incorrectly. Not any helper knew the amount of my crop. I wish it had been the amount stated, but it was nearly 8 tons less. The amount of bees was beyond the 100-colony mark in the spring, so you see the average was small. The season was cold and backward, and the working force decreased during the cold spell to half the amount of the usual working force, and hot winds finished up. My average in good years is from 200 to 300 pounds per colony. M. H. Mendleson.

Ventura, Calif., Aug. 21.

A Foul-Broody County

In almost all the bee-papers nowadays we see quite a discussion on foul brood. A short time ago our deputy foul brood inspector, Mr. G. DeMuth, called on me. He invited me to go out with him a day, which invitation I gladly accepted. Our first was a visit to an apiary of about 125 colonies—as nearly as we could find out about half diseased. The owner had treated some.

Our next was to an apiary of 8 colonies, 3 diseased. The owner did not know anything about foul brood.

Next was to a one-colony apiary, diseased; laying worker; and old combs scattered all over, as he had transferred them.

The next was to a lady with 2 box-hive colonies. They were simply rotten. When we gave her instructions, she wanted to know who we were and where from. She said she had had bees pretty nearly all her life and did not believe they were sick—only moth. She said this was like Chicago tuberculosis wave with cattle—first tear everything to pieces and then die out. It was very amusing.

The next apiary was 3 colonies, all diseased.

Our next was a large-sized apiary; as nearly as I can remember about ⅓ diseased. Although he was treating them, from the foregoing you can see that this county is a hot-bed of disease. And I think it is high time something is done, as it is pretty hard on an up-to-date bee-keeper to keep his bees healthy when such conditions exist around him. Most slipshod bee-keepers are afraid to tackle the job of transferring.

Henry Roorda.

Fair Oaks, Ind., Aug. 16.

A Discouraging Season

Another year for honey harvest is gone for this locality, as buckwheat is not grown here any more to speak of. Bees came out of the cellar very strong, but light in stores. Soft maple, box-elder and willow pollen were all lost on account of cold. Apple blossom was immense, and the weather just right; dandelion the same. Bees built up fine and required from one to 3 supers for room. White clover dried out last fall, but plenty came up from last year's seed, but no bees on it. It has been a hand-to-mouth affair for the bees. Alsike clover was fine, but the weather conditions were such that some days no nectar was gathered; some days one to 3 hours' work, then some days nothing again.

Bees were as cross as hornets. I began to think I must use a veil. Then perhaps the next afternoon the bees would come into the hives like a returning swarm, all crossness gone. Then basswood came very good, but strong winds hindered. The bees went northeast 2½ to 4 miles, and the flow was so good the bees roared early in the morning, but by 9 o'clock a heavy west or southwest wind came up and they could not fly against it when heavily loaded. There would not one bee plunk down at the entrance where there would be 20 on alsike—all inside of ¾ of a mile. Bees 3 or 4 miles from alsike clover or basswood are on the verge of starvation, even to tearing out the brood.

Sweet clover is on now, but that is so liable to get cut. The honey harvest will be the poorest in years. Just last year it was the best goldenrod in 18 years. Bees worked one fall. A long, black bug infests it and spoils the flower for nectar. Only one year did I see bees on mammoth clover; never on medium. But plenty of bumble-bees and plenty of nectar. The bees' tongues are too short. N. A. Kluck.

Lena, Ill., July 26.

Bees Having Hard Time

Last year was a good one for the bees, but they are now having a hard time to live. We have not had a good rain since last October. E. W. Sutcliffe.

Weatherford, Tex., Aug. 9.

White Clover a Failure

Bees in this locality are doing but little good. White clover was an entire failure. I have not had a swarm this year. Not new honey enough to sweeten a pancake.

(Rev.) Milton Mahin.

Newcastle, Ind., July 31.

Mostly Fair-Quality Honey-Dew

The past season has been a poor one. The honey that has been secured is mostly honey-dew, though of fair quality. We will feed all such back to the bees for winter stores, and at the same time hope for better results next season. Grant Stanley.

Nisbet, Pa., Aug. 24.

About Half a Crop—Introducing Queens

The honey crop in this locality is about half, amounting to a superful to the colony in my yard of 50, and gathered exclusively from basswood, which bloomed and yielded nectar more than in many years past. The bee-keepers of this section suffered also from the honey-dew scourge, said by old residents to be the first since the year 1856. The bees gathered continuously from this source for over 3 weeks, and filled the supers with the stuff. When basswood began to bloom I took all supers off and replaced them with new empty sections, and as the bees had been accustomed to going above they were storing nice basswood honey in a day or two, in the new sections. I gave the honey-dew honey away and found ready applicants for same.

I see from the reports of amateurs in the bee-papers that a great many have trouble in introducing queens by following instructions sent out by most queen-breeders with the queens sold. These losses happen more frequently by trying to introduce during a honey-dearth. I have had their experience, losing as many as four-fifths of the queens I tried to introduce, by following instructions on the mailing cage, and during a time when bees were gathering no honey. I can introduce every queen during a honey-dearth by the following method:

First, take the queen from the colony you wish to requeen. A day or two before putting the strange queen in said colony, take a Miller division-board feeder, putting it in place of a frame of honey next to the side of the hive. Place the new queen, caged and with attendants, across the feeder so as not to fall in the feeder. Pour in a quart of syrup made from equal parts of granulated sugar and water. This should be done late in the evening. Then the next morning early go to the hive and lift the quilt gently, and pour another pint of syrup in the feeder; after pouring a thin stream of luke warm syrup between each frame, and when all bees are busy taking up the syrup release the queen and let her run down between the frames, and close the hive. In 3 days after her release I always find her laying.

This method should be used in colonies that are of sufficient numbers so as not to be attacked by robbers, although I have never had the least trouble by bees trying to rob. James Wolfe.

Captina, W. Va., Aug. 17.

A New Departure in the book business has been taken by the Werner Company, Akron, Ohio, as you will note from their advertisement in this issue. As the largest actual manufacturers of books in the world, they are now making their product direct to the farmer at factory prices. We believe it to the interest of our readers to send for their catalog now, whether you contemplate purchasing any books or not. Please mention the American Bee Journal when writing.

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A Great Poultry Offer.—The particular attention of our readers is called to an advertisement in this issue under which Poultry Success, of Springfield, Ohio, the world's leading and best poultry journal is offering in connection with a year's subscription the great Briggs System and Secret books, making it possible for every one, beginner or experienced poultry-raiser, in confined quarters or where poultry has free range, to be more successful in handling poultry than by any other system.

The price of the Briggs Book has just been reduced from $5.00, and is now offered in connection with a year's subscription to Poultry Success at only $1.25.

We feel confident it will be profitable for our readers who are interested in poultry matters to investigate this offer and send to Poultry Success, Springfield, Ohio, for samples and circulars, although the advertisement appearing in this issue gives full information. You will make no mistake if you send the $1.25 at once, being very careful to address your letter in full as follows: Hosterman Pub. Co., Briggs Desk 49, Springfield, Ohio, and mention the American Bee Journal when writing.

National Convention at Sioux City, Sept. 22 and 23, 1909

The 40th convention of the above Association will hold its first session at 10 a.m., of Wednesday, Sept. 22, in the Armory room on the upper floor of the City Hall, in Sioux City, Iowa.

The Chicago House will be the headquarters for bee-keepers during the convention. General Manager France expects to be there the day before the convention opens, and have a reception committee at each train as it arrives with bee-keepers.

The program will consist of papers by some of the leading beedomites, question-box, etc. A large attendance is expected, among which will doubtless be many new faces. Come and meet your fellow bee-keepers, and enjoy the two-days' convention.

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Western Illinois Convention

The annual convention of the Western Illinois Bee-Keepers' Association will be held in the County Court room, at Galesburg, on Wednesday, Oct. 13, 1909. All interested in bee-keeping are invited to attend.

W. B. Moore, *Pres.*, Altona, Ill.
F. B. Hazlett, *Sec.*, Galesburg, Ill.

SPECIAL CLUBBING AND PREMIUM OFFERS

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AMERICAN BEE JOURNAL

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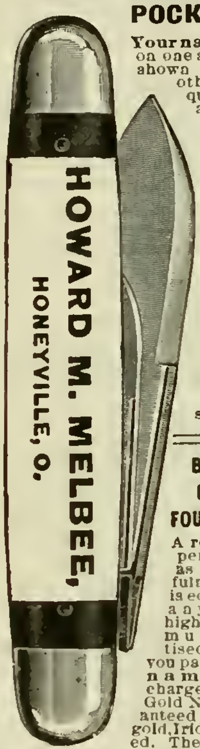

Your name and address put on one side of the handle as shown in cut, and on the other side pictures of a queen-bee, a worker, and a drone. The handle is celluloid and transparent, through which is seen your name. If you lose this knife it can be returned to you, or serves to identify you if you happen to be injured fatally, or are unconscious. Cut is exact size. Be sure to write exact name and address. Knife delivered in two weeks. Price of knife alone, postpaid, $1.25, With year's subscription, $1.75. **Free** for 4 new 75c subscriptions.

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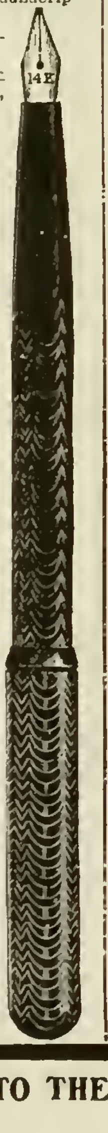

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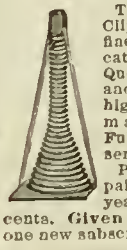

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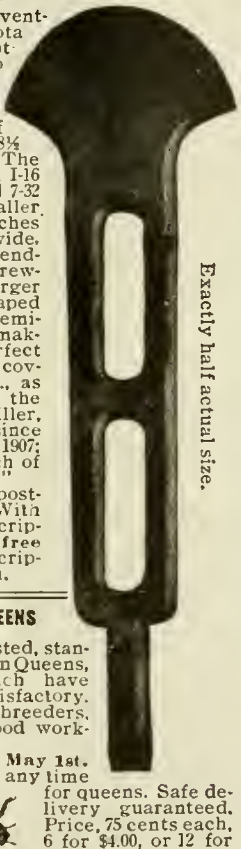

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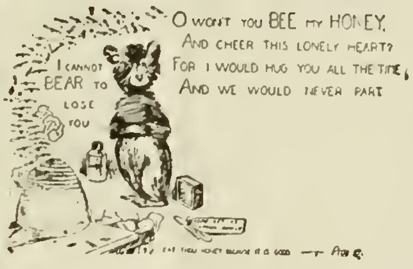
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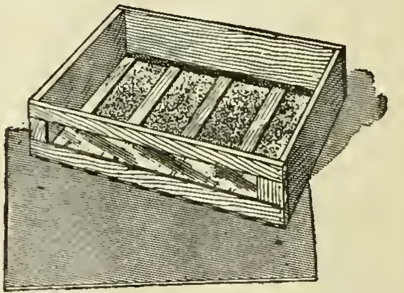

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We may say further that we are planning certain improvements that will increase greatly the cost of publishing the American Bee Journal another year—improvements that will more than offset the small increase of 25 cents a year in subscription price—even contemplating a 48-page Journal, if possible to do it. The Editor is now devoting **all** of his time to the Bee Journal, which fact alone should tend to make it more valuable as the months pass on.

More than 3 Months Before the Raise in Price is to Go into Effect

But it will be noticed that the $1.00 price does not become effective until Jan. 1st next, or over 3 months yet. And during the time intervening we are going to allow all who wish to do so, to pay their subscriptions **two years in advance at the present 75-cent rate.** That is, you can pay all back dues (if any) and for all of 1910 and 1911 at 75 cents a year. So, really, there will be no raise in price for over 2 years to all who pay their subscriptions **before next Jan. 1.**

Save 50 Cents by Subscribing Before Jan. 1st

By paying subscriptions for 1910 and 1911 any time between now and the end of this year (1909), you will save just 25 cents a year, or 50 cents. But we cannot allow subscriptions to be paid beyond the year 1911 at the present 75-cent rate. Please tell your neighbor bee-keepers about this, so that they, too, can take advantage of the special offer for 2 years beyond 1909.

Clubbing and Special Offers to Stand the Rest of this Year

Our Special and Clubbing Offers will all stand until the end of this year (1909). So none of our present subscribers can really object to the increase in subscription price, for they have the opportunity of paying their subscriptions two whole years beyond this year at the present 75-cent price—by sending them in **before next January 1st.** (Of course, if any have already paid their subscriptions beyond 1911, such will stand as now credited.)

You are Invited to Help Increase the Bee Journal Subscription List

We offer many liberal premiums for getting **new** subscriptions for the American Bee Journal. We hope our readers will do what they can to get their bee-keeping neighbors to subscribe, and thus earn some of the premiums we offer. Let us work together for each other's interest and advancement, and for the good of bee-keepers everywhere.

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QUEENS
Of High Quality

Our queens are reared by the most **approved methods** by a **queen specialist** of 30 years' experience.

We breed the **Leather-Colored, Red Clover,** and **Golden Italians.**

We solicit the trade of all bee-keepers wishing to secure a **hardy, prolific race** of Italians, whose **honey-getting qualities** have been proven **superior.**

Select untested	$ .75	½ doz. $4.00	1 doz. $ 7.50
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Queens by return mail. Prices for large quantities on application. Circular free.

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Successors to the York Honey & Bee-Supply Co.
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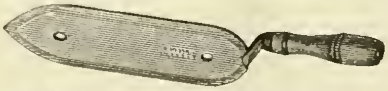

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Send 10c for four sample issues of our big fruit magazine and we will send you any one of the following highly popular songs: "My Rancho Girl," "Some Time in After Years," "A Boy and a Girl," "Molly Dear," "Falling Leaf," free. Don't wait, send today to the Fruit Belt Publishing Co, 187 E. Fulton St., Grand Rapids, Mich.

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We are accumulating quite a large stock of bee-yard engravings and other pictures used from time to time in the American Bee Journal. No doubt many of them could be used by bee-keepers in their local newspapers, on their letterheads, on souvenir cards, or in other profitable or interesting ways. If we can sell them it will help us to pay for others that we are constantly having made and using in these columns.

We do not have a catalog or printed list of the engravings, but if you will let us know just which you want we will be pleased to quote you a very low price, postpaid. Just look through the copies of the Bee Journal and make your selection. Then write to us.

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Standard Hives with latest improvements, Danzenbaker Hives, Honey-Boxes, Comb Foundation and everything that is used in the bee-yard. Large illustrated catalog mailed free. Finest White Clover Extracted Honey for sale in any quantity desired.

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37 Years Experience, breed 3-band Italians only.

	November 1st to July 1st			July 1st to Nov. 1st		
	1	6	12	1	6	12
Untested	$1.00	$5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select Untested	1.25	6.50	12.00	1.00	5.00	9.00
Tested	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested	2.50	13.50	25.00	2.00	10.00	18.00

Breeders $4.00. Add twenty percent for queens to be exported.

Nuclei, without queens: 1-frame, $2.50; 2-frame, $3.50; 3-frame, $4.50. 1 Full Colony, 8-frame, $9.00.

Select the queen wanted and add to the above prices.

NOTE

I have transferred to my son, Benj. G. Davis, my straight 5-band and Golden department, and in order to receive the promptest attention, all correspondence for these should be sent direct to him. He practically grew up in my queen yards, rears queens by my methods, has had charge of this department for years, and understands his business.

Prices same as above except Breeders, which are $4.00 to $10.00. No disease.

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Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed free at the bottom of front page on all orders for 100 or more copies.

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1 colony, $5; 2 for $9; 5 for $20. Queens—Untested, 75c each; 6 for $4; Tested, $1 each; 6 for $5. Will put swarms into any style hive to suit purchaser. 5Atf

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Italian Queens—hustlers. Untested, 60c; Select, 75c; Tested, $1.25. 8A2t

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Three-Band Golden Italians Caucasians Carniolans

	1	6	12
Untested	$0.75	$4.25	$ 8.00
Select Untested	1.00	5.50	10.00

Tested, $1.50; Select Tested, $2.00

We have in charge of this department MR. LESLIE MARTIN, formerly queen-breeder in the Apiary of the U. S. Dept. of Agriculture, Washington, D. C.

Send for our free catalog of "Falcon" Bee-Keepers' Supplies.

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At Root's Factory Prices

Honey Wanted!

If it is Extracted Honey, mail us sample and quote us lowest price; if it is Comb Honey, state what kind it is and how it is put up. We are **always** in the market for honey.

Give us a trial on **Red Clover** and **Golden Yellow Italian Queens.** Ours cannot be excelled.

C. H. W. WEBER CINCINNATI ...OHIO...

Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

Honey and Beeswax

CHICAGO, Aug. 26.—The new crop is appearing on the market, and sells quite well at 15@16c for A No. 1 to fancy comb that is produced from white clover and basswood; other kinds and grades from 1@3c less per pound. Extracted, 7@8c for white, and 6@7c for ambers. Beeswax, 30c.
R. A. BURNETT & CO.

BOSTON, Aug. 31. Good demand for fancy white comb honey at 16@17c. No. 1, 15@16c. Fancy white extracted, 8@9c light amber, 7@8c; amber, 6@7c. Beeswax, 32c.
BLAKE, LEE CO

CINCINNATI, Aug. 26.—There is just beginning to arrive here in Cincinnati some Western comb honey, which finds ready sale in a small way at 16c, larger quantities at 14½c. Extracted table honey is exceptionally brisk in prices, ranging from 8@9c. Amber honey, fair demand, is selling at 6@6½c. Beeswax slow at $33 per 100 lbs. This is our selling price, not what we pay.
C. H. W. WEBER & CO.

PHILADELPHIA, Aug. 25.—There has been considerable activity in the honey market in the last 10 days. The uncertainty as to the amount of honey-dew in the local market has kept dealers guessing, and has caused considerable inquiry. There have been some few sales, but it is a little early for deliveries as yet. Fancy comb honey, 16@18c in small lots; light amber, 13@14c; fancy water-white extracted in 60-lb cans, 7½c; amber, 6½c; in barrels, 6c. WM. A. SELSER.

NEW YORK, Aug. 27.—We are now beginning to receive small shipments of new crop comb honey, principally from New York State. There is a fairly good demand at 15c for fancy white; 13@14c per lb. for No. 1; and 11@12c for No. 2. No buckwheat honey on the market as yet, and do not expect to have any for some time to come on account of the season being late. Extracted honey is in fair demand. New crop California is now on the market and selling at following prices: Water-white sage, 8@8½c; white sage, 7c; light amber, 6@6½c. Very little extracted clover or basswood honey on the market as yet, and same is selling at about the same prices as California. Southern, 60@75c per gallon, according to quality. Beeswax, 29@30c.
HILDRETH & SEGELKEN.

ZANESVILLE, OHIO, Aug. 26.—The local honey market is about normal. The demand for best grades of comb exceeds the supply. Prices are still unsettled. Producers would receive for No. 1 to fancy white clover 14@15c, and for best extracted 8@8½c. Wholesale prices practically unchanged. For good clean beeswax I offer 28c cash, or 32 in exchange for merchandise.
EDMUND W. PEIRCE.

INDIANAPOLIS, Aug. 26.—There is a good demand for best grades of honey, but the market is now well supplied. Indiana bee-keepers, as well as merchants, are good buyers. Producers are being paid the following prices: Fancy white comb, 16c; No. 1 white, 14c. Finest extracted in 5-gallon cans, 8c. No demand for amber or off grades. Producers of beeswax are receiving 28@30c.
WALTER S. POUDER

DENVER, Aug. 28.—There is a good demand for white comb honey in carload lots, and we commenced shipping last week. Local demand is fair at following prices: Strictly No. 1 white, $3.30 per case of 24 sections; No. 1 light amber, $3.15; No. 2, $3.00. White extracted 7½@8⅛c; light amber, 6¾@7½c. We pay 24c for clean yellow beeswax delivered here.
THE COLO. HONEY PRODUCERS' ASS'N.

I Want to Sell my Apiary

Of 100 Colonies and some Nuclei. A number of extra hive-bodies and supers for both comb and extracted honey go with the bees, which are almost wholly Italian, of the best stains to be found in America Something like 100 shipping-cases, half of them made up, will go in with the deal; also some 60-lb shipping-cans never used.; quite a lot of queen-excluders, Alley trap Lewis foundation fastener, Novice extractor; a few crates of sections 4¼x1⅞, 1 Rietsche press (never used); a number of bee-escapes, some atmospheric feeders; several volumes of Am. Bee Journal, Gleanings in Bee Culture, and Bee-Keepers' Review, copy of "Langstroth on the Honey-Bee," Doolittle's "Scientific Queen-Rearing," and Miller's "Forty Years Among the Bees." Also a lot of queen-excluding zinc and honey-boards. There will be quite a lot of drawn combs both for extracted and comb honey to go with the bees if sale is made.

I would like to have some man who wants bees, come here and look the stuff over and take charge of its removal if the sale is made. My health does not permit me to do any more work in the bee line or anywhere else.

Edwin Bevins, Leon, Iowa

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We will Buy and Sell

HONEY

of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for

Beeswax

at highest market prices.

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THE COLORADO HONEY-PRODUCERS' ASS'N, Denver, Colo.

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Be Sure to get our PRICES on

BEESWAX **BEESWAX**

Before selling your season's Wax
or
Let us send to you our Prices for Working your Wax into

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Many large Honey-Producers prefer our Foundation to other makes, because the bees like it best.

We can use almost an unlimited quantity of BEESWAX, and we are buying at all times of the year **at highest cash prices.**

During the season of 1909 we handled over 150,000 pounds of Beeswax.

If your Honey supply is short we can supply you with either

White or Amber Extracted Honey.

SEND FOR PRICES AT ONCE.

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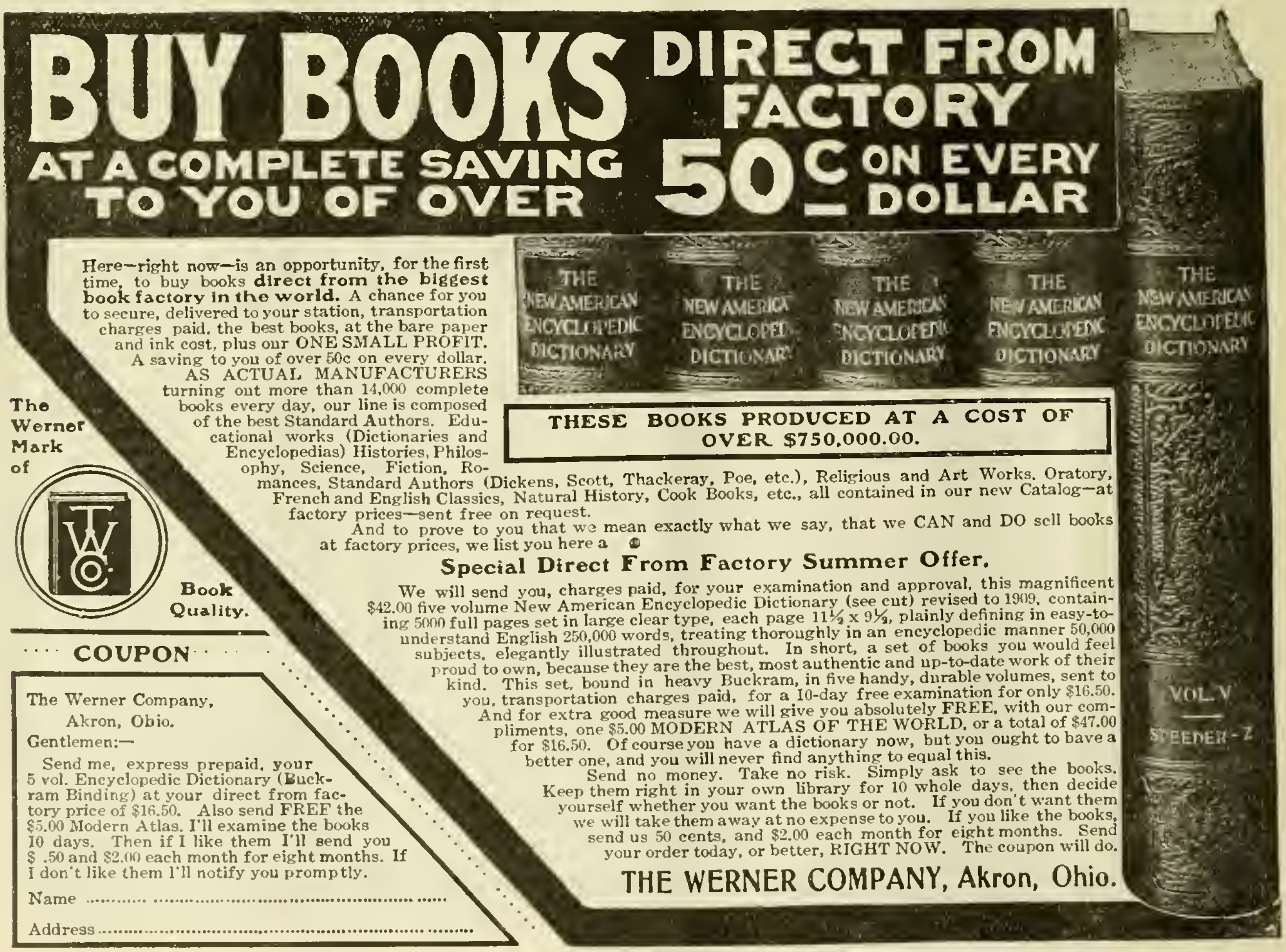

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49TH YEAR

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OCTOBER
1909

THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY
GEORGE W. YORK & COMPANY
146 W. Superior St., Chicago, Ill.

IMPORTANT NOTICE.

THE SUBSCRIPTION PRICE of this Journal is 75 cents a year, in the United States of America, (except Chicago, where it is $1.00), and Mexico; in Canada 85 cents; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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Objects of the Association.

1st.—To promote the interests of its members.

2d.—To protect and defend its members in their lawful rights.

3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

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N. E. FRANCE, Platteville, Wis.

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A new method, just published; worthy of investigation by all progressive bee-keepers. Advantages claimed for the plan of treatment. No clipping of queens' wings—no caging of queens—not even necessary to look for queens; no pinching of queen-cells—no shook swarming—no dividing—no extra expense connected with the plan—plan simple and easy to carry out—satisfactory honey crop—saves time and labor. Send to

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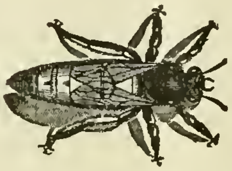
Untested Italian Queen-Bees

Booking Orders for 1909

6 Queens for $4; 3 for $2.10; 1 for 75 cents



A Standard-Bred **Italian Queen-Bee**

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

What They Say of Our Queens

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work. A. W. SWAN.
Nemaha, Co., Kan., July 15, 1905.

⁂

GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best. She keeps 9½ Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
Ontario, Canada, July 22, 1905.

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GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of my best colonies. N. P. OGLESBY.
Washington Co., Va., July 22, 1905.

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GEORGE W. YORK & CO.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. MCCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for $1.20. Three Queens (without Journal) would be [illegible], or 6 for [illegible]. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

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Is the Best. Not because we say so, but because the Bees prefer it to other makes.

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BEE-LINE

Queens any quantity. Tested, $1.00; Untested, 75c each. 4Atf

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By Thomas G. Newman

bound in cloth, that we offer cheap to close out. It contains 160 pages, and is bound in cloth. It used to be a one-dollar book, but we will mail them, so long as they last, at 50 cents each; or with the American Bee Journal one year—**both for only $1.00.** Surely this is a bargain. The book is well illustrated, and has some good information in it, especially for beginners. Address all orders to

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By sending to several different Queen-Rearers in Austria for the last few years, we have succeeded in getting a desirable strain of Carniolan bees. To any of the bee-keepers wishing to try a pure Carniolan queen, it will be sent by return mail. One tested for $1.00; 6, $5.00; 12, $9.00. One untested, 75c; 6, $4.25; 12, $8.00. Address, 8Atf

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We manufacture this right here, out of clean Southern wax which is superior to all other. We are careful to retain the original fragrant odor of the hives. It takes skill and care to do this. If you desire to have your beeswax worked up in this way send it here. We wish large quantities of wax from associations to be worked into comb foundation. Write for rates. Reliable agents wanted everywhere. Illustrated catalog free. 5A6t

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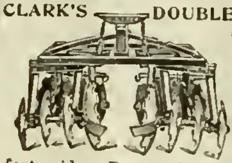

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Choice, well ripened Extracted—clear, light golden color and delicious flavor—7¾ to 8c. Sample 6c, deducted from order. Comb Honey, No. 1 and Fancy, in 4¼ plain and scalloped sections, 14 to 16c. 10A3t

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FOR SALE—several tons fall crop Comb and Extracted. State your wants.

BEES and QUEENS

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QUIRIN-THE-QUEEN-BREEDER,
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IF you need a nice yellow Italian Queen at once, send to **J. L. Fajen, Alma, Mo.** Untested, only 75c. Tested, $1.25. 3-frame nucleus with Queen, $2.75. Full colony, in 8-frame hive, $5.50. 6A6t

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300 Surplus Tested Red Clover and Golden Queens, at 50c. each, to close the season on Queens. **H. A. ROSS,**
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Baby Chicks 8 cts. each. Eggs for hatching, $4 per 100. All kinds poultry at lowest prices. Guarantee safe arrival anywhere. Write for price-list 10A6t
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Clemons' strain of three-banded Italians has no equal. Mr. M. R. Juckett, Poultney, Vt., writes: "I have queens from seven different breeders, and yours are the only ones which have produced honey in the sections."

Mr. N. L. Stevens, president of New York Bee-Keepers' Society, Moravia, N. Y., who purchased of me in 1907, 46 of my cheapest untested queens, writes Jan. 22, 1909: "The queens I purchased of you in 1907 proved very satisfactory. I bought over 300 queens that season from 10 different breeders, and your bees averaged the best of any of them the past season, and only one strain was a close competitor. Your bees built up very rapidly, and were good honey-gatherers."

Why pay a high price for the common kind when others report such results? If you don't try a few of my queens we shall both lose money.

Untested queens, 60 cts. each; select untested, 75 cts.; tested, $1.00; fine breeding queens, $2.00 to $5.00. Safe arrival and satisfaction guaranteed. 7A4t

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Has the latest report of all the best work in practical entomology. Articles upon apiculture by national authorities appear in it. If you wish the best entomological journal for the practical man, subscribe for it. $2 a year.

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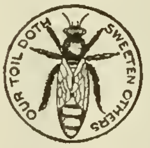
Celluloid Queen-Buttons

These are very pretty things for bee-keepers or honey-sellers to wear on their coat-lapels. They often serve to introduce the subject of honey, which might frequently lead to a sale.

NOTE.—One bee-keeper writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of these buttons], as it will cause people to ask questions about the busy bee, and many a conversation thus started wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."


OUR TOIL DOTH SWEETEN OTHERS

The picture shown above is a reproduction of a motto queen-button that we offer to bee-keepers. It has a pin on the under-side to fasten it.

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I Want to Sell my Apiary

Of 100 Colonies and some Nuclei. A number of extra hive-bodies and supers for both comb and extracted honey go with the bees, which are almost wholly Italian, of the best stains to be found in America. Something like 100 shipping-cases, half of them made up, will go in with the deal; also some 60-lb. shipping-cans (never used); quite a lot of queen-excluders; Alley trap; Lewis foundation fastener; Novice extractor; a few crates of sections 4¼x1⅞; 1 Rietsche press (never used); a number of bee-escapes; some atmospheric feeders; several volumes of Am. Bee Journal, Gleanings in Bee Culture, and Bee-Keepers' Review; copy of "Langstroth on the Honey-Bee," Doolittle's "Scientific Queen-Rearing," and Miller's "Forty Years Among the Bees." Also a lot of queen-excluding zinc and honey-boards. There will be quite a lot of drawn combs both for extracted and comb honey to go with the bees, if sale is made.

I would like to have some man who wants bees, come here and look the stuff over and take charge of its removal if the sale is made. My health does not permit me to do any more work in the bee line or anywhere else.

Edwin Bevins, Leon, Iowa

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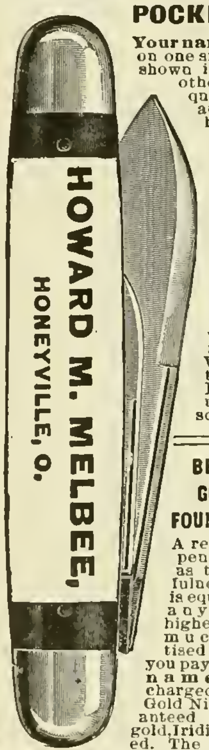
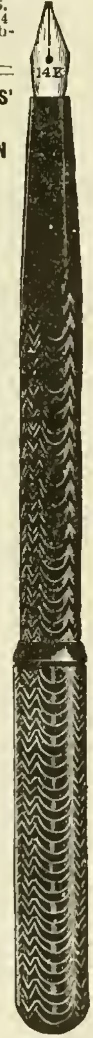


Your name and address put on one side of the handle as shown in cut, and on the other side pictures of a queen-bee, a worker, and a drone. The handle is celluloid and transparent, through which is seen your name. If you lose this knife it can be returned to you, or serves to identify you if you happen to be injured fatally, or are unconscious. Cut is exact size. Be sure to write exact name and address. Knife delivered in two weeks. Price of knife alone, postpaid, $1.25, With year's subscription, $1.75. **Free** for 4 new 75c subscriptions.

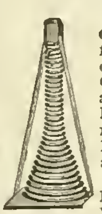
BEE-KEEPERS' GOLD-NIB FOUNTAIN PEN



A really good pen. As far as true usefulness goes is equal to any any of the higher-priced, much-advertised pens. If you pay more it's **name** you're charged for. The Gold Nib is guaranteed 14 Karat gold, Iridium pointed. The holder is hard rubber, handsomely finished. The cover fits snugly, and can't slip off because it slightly wedges over the barrel at either end This pen is non-leakable It is very easily cleaned, the pen-point and feeder being quickly removed. The simple feeder gives a uniform supply of ink to the pen-point without dropping, blotting or spotting. Every bee-keeper ought to carry one in his vest-pocket. Comes in box with directions and filler. Each pen guaranteed. Here shown two-thirds actual size.

Price alone, postpaid, $1.00. With a year's subscription, $1.50. **Given free** for 3 new subscriptions at 75 cents each.

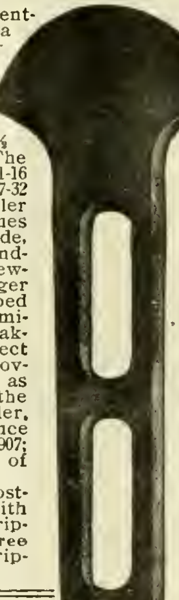
MONETTE QUEEN-CLIPPING DEVICE



The Monette Queen-Clipping Device is a fine thing for use in catching and clipping Queens' wings. Four and one-half inches high. It is used by many bee-keepers. Full printed directions sent with each one.

Price alone, postpaid, 25 cents. With a year's subscription, 90 cents. **Given free** for sending one new subscription at 75 cents.

IDEAL HIVE-TOOL



Exactly half actual size.

A special tool invented by a Minnesota bee-keeper, adapted for prying up supers and for general work around the apiary. Made of malleable iron, 8⅛ inches long. The middle part is 1 1-16 inches wide and 7-32 thick. The smaller end is 1⅞ inches long, ½ inch wide, and 7-32 thick, ending like a screw-driver. The larger end is wedge-shaped having a sharp, semi-circular edge, making it almost perfect for prying up covers, supers, etc., as it does not mar the wood. Dr. Miller, who has used it since 1903 says, Jan. 7, 1907; "I think as much of the tool as ever."

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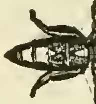
These are untested, standard-bred Italian Queens, reports of which have been highly satisfactory. They are active breeders, and produce good workers.



Sent only after May 1st. Orders booked any time for queens. Safe delivery guaranteed. Price, 75 cents each, 6 for $4.00, or 12 for $7.50. One queen with a year's subscription, $1.20. Queen **free** for 3 new 75c subscriptions.

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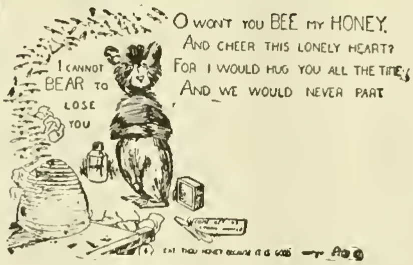
O WON'T YOU BEE MY HONEY.
AND CHEER THIS LONELY HEART?
FOR I WOULD HUG YOU ALL THE TIME,
AND WE WOULD NEVER PART
I CANNOT BEAR TO LOSE YOU

A "Teddy Bear" on good terms with everybody, including the bees swarming out of the old-fashioned "skep." Size 3½x5½, printed in four colors. Blank space 1½x3 inches for writing. Prices—3 postpaid, 10 cents; 10 for 25 cents. Ten with a year's subscription, 90 cents. Six **given free for one new** 75c subscription.

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AMERICAN BEE JOURNAL

(Entered as second-class matter July 30, 1907, at the Post-Office at Chicago, Ill., under Act of March 3, 1879.)

Published Monthly at 75 cents a Year, by George W. York & Company, 146 West Superior Street,

GEORGE W. YORK, Editor.
DR. C. C. MILLER, Associate Editor.

CHICAGO, ILL., OCTOBER, 1909

Vol. XLIX---No. 10

Editorial Notes and Comments

Canned Comb Honey—Is It Coming?

There are signs that the Texas idea is gaining ground in other parts of the country. There are a number of reasons for this.

First, there is the very excellent reason that the number of colonies cared for by any one person is largely increased by this method.

The second reason is also important; practically no swarming with its attendant worries.

The third is equally important—less expense in management.

Fourth, less technical knowledge required.

Fifth, quick sales at good prices.

The last reason is the one that carries weight, and we know that since the Texans adopted the canned comb-honey idea they have had no difficulty in disposing of their crop at fair prices.

Now, if this plan works well in Texas, why will it not work in other parts of the country as well? They use the same appliances as we do, and the conditions are practically the same.

What we need at present is the advice and help of men who have tried this plan, and succeeded, and who know the details. Their experience would be valued by many of our readers.

Milk and Honey—A Good Mixture

D. M. Macdonald says in the Irish Bee Journal, "'Milk and honey' is a scriptural phrase, showing that even in early times the mixture was highly appreciated." Now what authority has that canny Scotchman for saying that those emigrants to the land of Canaan took their milk and honey "mixed?" After all, why not?

Foul-Brood Samples

There are indications that foul brood of both kinds American and European (the latter is also called "black brood") is distributed more generally than is supposed. To a greater or less degree there is a tendency to suppress the knowledge of the presence of foul brood. The wisdom of such a policy may well be doubted. It is no disgrace to have one's bees attacked by foul brood, and the knowledge that the disease has appeared in any given region is likely to put on his guard any bee-keeper who may be in that region.

The approach of foul brood is often insidious. By some unknown means it may be carried to a spot many miles distant from any known case. The bee-keeper whose bees have never had foul brood, and on that account thinks he has no personal interest in it, is making a mistake. Every bee-keeper owes it to himself, and to his bee-keeping neighbors, to be somewhat familiar with the literature of foul brood.

It is a matter of hearty congratulation that we have at Washington such a man as Dr. Phillips, who with his able corps of assistants, is always ready to render prompt aid to bee-keepers. If any reader of this paper finds in his apiary anything that makes him suspicious that disease of any kind may be present, let him promptly send a diseased sample to Dr. E. F. Phillips, Agricultural Dept., Washington, D. C. If uncertain as to the best way to send, ask Dr. Phillips to send a container in which the diseased sample may be safely mailed.

Don't send samples to this office; don't send to Dr. Miller. At neither Chicago nor Marengo are there the facilities for examination and determination--such as there are at Washington nor the skill to use them. There is no charge whatever made for examination and information. The highest skill is at the command of the humblest bee-keeper, free as the air he breathes.

Nailing Honey-Packages

H. C. Ahlers, in the Bee-Keepers' Review, urges the importance of thoroughly and carefully nailing the boxes that contain cans of extracted honey. He buys and sells, and says:

> "Frequently shipments reach me in which cans and boxes have parted company; or the bottom has pulled off one end of the box and the nails run up through the can. * * Every box that I nail contains 16 8-penny nails and the balance 6-penny box nails."

Editor Hutchinson says, "Yes, and we learned that nailing alone was not sufficient for the two-can case of five gallon cans—they must be bound with iron at the ends."

Honey-Dew—What About It?

So much is said about honey-dew this year that an Ohio correspondent thinks a discussion of the subject editorially would be appropriate. On page 299, he will find honey-dew so ably discussed by that practical writer, C. P. Dadant, that little is left to be said.

The chemists tell us that the main difference between honey and honey-dew is that the latter contains cane-sugar, and shows polarization to the right, while the bees have inverted the cane-sugar of the floral nectar, changing it to grape sugar, showing polarization to the left. According to the pure-food laws, it cannot be sold as honey, only as "honey-dew honey."

As to wholesomeness, it depends upon whether it is meant to be used as food for man or bee. For man it is not unwholesome, except for its bad taste, for no food can favor digestion that tastes as vile as does some honey-dew. But there is honey-dew and honey-dew. Prof. Cook says in the American Bee Journal for January, 1899:

> "It is not to be inferred that this honey-dew is unwholesome. It is a secretion, and not an excretion. It has a similar origin to honey, and may be as delicious. Much aphid honey-dew is deliciously wholesome, and the honey from it is superior. Most if not all of

the coccid honey-dew [that from scale-lice], on the other hand, is dark and of ill-flavor, and its presence in honey, or as honey, is greatly injurious, and it can never be sold for the table. I have sold it by the barrel for manufacturing. This was used to make cookies, and was said to be all right by the manufacturer."

As winter food for bees, if in quantity, honey-dew is dangerous, producing diarrhea, and perhaps death. Root's "A B C and X Y Z of Bee-Culture," says:

> "We occasionally have it scattered in little patches in our combs; but in late years we have let our bees have all such combs, and no bad results have followed; but if there is very much honey-dew in the combs we extract it and put in its place granulated sugar syrup."

Mr. Dadant says, page 300:

> "I have never seen any production of honey-dew at other times than June."

If this be true in general, there ought to be little difficulty in getting it out of the hives in good season, replacing with sugar syrup if a later flow does not make this unnecessary.

Bad as honey-dew is, it is possible that its presence should not generally be deplored. When it comes so as to flavor and color otherwise white honey, its presence is deplorable. But bees are dainty in their tastes, and it may be doubted whether they store honey-dew when anything better is to be had. The great prevalence of honey-dew this year may not be so much that honey-dew is plenty, but that floral nectar is scarce, the bees being in a sense forced to gather what in other years they neglect. Instead of having the bees entirely idle, it may be better to have them gathering honey-dew. It will at least keep up breeding, and it is all right to sell it for what it really is.

Propolis in Supers

Wesley Foster, in Gleanings, says that if sections are to be kept spotlessly white, propolis must be scraped clean from hives and frames, and the scrapings must be kept out of the reach of the bees. "Leaving the scrapings beside or in front of the hive is almost as bad as leaving them in the hive, for the bees will be found working on those little bits, carrying them back into the hives."

Producing Honey—A Critic Criticised

In Leslie's Weekly appears an article written by H. G. Hertel, the general trend of which will be understood by reading the opening paragraph, as follows:

> EDITOR OF LESLIE'S WEEKLY:—On the editorial page of a recent issue of your paper appears the question, "Do bees make bad honey?" Whereas there are so many silly notions current, and so many erroneous ideas entertained by the public concerning bees and honey, I feel it incumbent upon me, for the sake of disseminating the truth, to answer this question, and have therefore resolved to write you.

As the dissemination of truth is the thing Mr. Hertel is after, he will not take it unkindly if some things in his article are pointed out which will be likely to lead the readers into error.

He starts out by saying, "let us remember that bees do not make honey, but collect it." But in the very next paragraph he says that when only inferior nectar can be had, the bee has no choice in the matter; "he simply gathers it, and, of course, makes bad honey." "Let us remember that bees do not make honey," and in the next breath, "he * * * makes bad honey." Which is the reader to believe?

Mr. Hertel says that bees "must gather the nectar the flower offers." They cannot gather honey from the flower, for there is no honey there—only nectar. As that nectar, after being put through a certain process by the bees becomes honey, it appears to the common mind quite plain that bees do make honey.

When Mr. Hertel says, "he simply gathers it," he misleads the general reader into believing that the male bee does the work. The male bee, or drone, does no work; the worker-bee does all. The worker is a female; not fully developed, to be sure, but certainly not a male.

Mr. Hertel says, "It is a well authenticated fact that plant-lice produce a sweet excretion known as honey-dew." That is a libel on honey-dew, some of which is good to eat, and all of it unobjectionable on the score of cleanliness. Honey-dew is not an excretion but a secretion, there being a wide difference between the two. We cheerfully accept the secretion of the cow in the form of milk, but would seriously object to a diet of her excretion in the form of cowdung.

"The fixing of a standard of honey by Dr. Wiley," says Mr. Hertel, "appeals to one familiar with bee-culture and the production of honey as being decidedly ridiculous." That standard was fixed by Dr. Wiley in consultation with practical bee-keepers, men "familiar with bee-culture and the production of honey," and heretofore there has probably been no voice raised in the entire ranks of bee-keepers to pronounce it ridiculous. At any rate, it is now embodied in the pure food law, and Mr. Hertel may find himself in trouble if he attempts to sell as honey anything that does not come up to that standard.

Mr. Hertel says, "Bees can gather 15 pounds of honey while they produce one of wax." This is something new. Bee-keepers will be under lasting obligations if Mr. Hertel will tell just how long it takes to gather a pound of honey or to produce a pound of wax, and just how he determined the length of time. Possibly he has confused this statement with another, that bees consume 15 pounds of honey (some think much less) in producing a pound of wax.

Misunderstanding upon any or all of these points is not likely to lead to serious results. The same cannot be said of Mr. Hertel's last point. He says:

> Most people think that honey in the comb escapes adulteration. It does; but the adulteration of comb honey is still an easy matter—the adulteration takes place prior to the product's being placed in the comb and sealed by the bee. There is nothing physical which will prevent a bee-keeper from feeding his bees with cheap syrup and letting them deposit it in the comb and cap it nicely. To the unsuspecting, such a comb, capped by the bee himself, is a guarantee of purity; yet the customer might be buying ingeniously sealed glucose.

Plainly, that will leave on the minds of many of the thousands of readers of Leslie's the impression that when one buys on the open market a section of comb honey there is no small chance that it may be glucose. What ground has he for his assertion that "the customer might be buying ingeniously sealed glucose?" Has he ever seen anything of the kind? Has he ever heard of it? True, there is the canard that went the rounds of the press of artificial comb filled with glucose and sealed with a hot iron without ever having been near a bee-hive, but if Mr. Hertel is informed he must know that for years there has been a standing offer of $1000 for a single pound of comb honey made without the aid of bees—an offer that has never been taken. But has he any reliable information of a single pound of glucose that has ever been sold under the guise of comb honey? Some who have tried it report that bees cannot be induced to store and seal the stuff. Has Mr. Hertel been any more successful?

If Mr. Hertel is at all "familiar with bee-culture and the production of honey," he ought to "feel it incumbent upon him, for the sake of disseminating the truth," to hasten to say that the customer who buys a section of honey is just as sure to find honey and not glucose within the cell as he is to find apple-pulp and not sawdust within the skin of an apple.

Foul Brood Treatment

A. W. Smyth, M. D., says in the Irish Bee Journal, that in America foulbroody bees are thrown on starters, and again on new foundation after 48 hours. Not 48, Doctor, but 96 hours, or 4 days.

Weather to Put Bees Out of Cellars

It is generally agreed that it is best that the weather should be such that bees can fly immediately after being taken out. It is well, however, to know that one may do otherwise without disaster. Morley Pettit reports, in the Bee-Keepers' Review, that he uncellared 38 colonies March 24, moved them at once ¾ of a mile, when it turned cold and rained with no flight for a week. They did well. But he says, "The bees were in good condition; there was no extreme cold, and the day of flight was calm, bright, and warm."

Position of Bait-Sections

The Bee-Keepers' Review, endorsing E. D. Townsend, says:

> Bees are inclined to begin work first in the center of the super, hence the sections in the center are finished first. Now, if you will place the "baits" in the corners it will induce the bees to begin there first, and they will very soon spread out to the center much more readily than from the center outwards, hence the sections are finished up very evenly all over the case. Put the "baits" in the corner, every time.

It is understood, of course, that no baits are given in any super except the first, the object being to get the bees to start work in the super sooner than they would without any bait. As Editor Huthinson says, "bees are inclined to begin work first in the center of the super," so they will begin work sooner in a bait in the center of the super than in one that is in the corner. Still more will they be inclined to begin on a single central bait than to begin simultaneously on 4 outside baits located at 4 different points. The difference of time of starting, short though it be, may make all the difference between promptly starting in the super and swarming.

As the *sole* object of the bait is to start the bees at work promptly, there will no doubt be many who will consider promptness of starting of more consequence than evenness of finish, and who will say, "Put the bait in the center, every time."

Does Shaking Bees Increase the Crop?

Not so much has been said lately about the matter. Adrian Getaz, after having tried it the past season, reports this in the Bee-Keepers' Review:

> The results, so far as I am concerned, are a complete failure. I cannot see that any of the shaken colonies have done any better than the others in any case. Furthermore, I do not find the process as easy and as well adapted to green hands as Mr. Williams does. A part of my bees are Italians, mostly 4-banded, descended from Doolittle stock, though the queens were originally bought from a Southern breeder. These do not shake worth a cent. They cling tenaciously to their combs.
>
> Others are hybrids of all degrees, some nearly black, and most of them rather vicious. They fall off the combs easily, but often resent it, and undertake to "shake" the apiarist very pointedly.

But leading bee-keepers report success with shaking, and others express belief in it from the nature of things. In each case where success is reported, however, the shaking has always been done in connection with some change of conditions. Without taking one side or the other, it may be pertinent to ask whether in any case shaking *alone* has produced increased activity. It ought not to be a difficult thing to give the matter a test. Let all the colonies of an apiary be treated alike in every respect except that one-half shall have the bees shaken off the combs once in so often, and the other half left unshaken; then note results. Mr. Getaz seems to have tried something of the kind, and reports failure. Has any one else made it a success?

"Not Worth Patenting"

D. M. Macdonald quotes Editor Root as saying:

> "We would not give one cent for a patent on any kind of feeder, because there are too many good unpatented feeders, so that any one who gets out a patent on a feeder is wasting his good money for nothing."

Mr. Macdonald then asks:

> "Are not patent hives also much in the same category?"

Weight of Bees

Ten bees were caught at the hive-entrance. The average weight was at the rate of 4540 to the pound. Three were fully laden with nectar, 3 half-laden, and 4 had empty sacs. The weight of the load where the sac was fully laden was about one-fifth the average weight of a bee.—*Prakt. Wegweiser.*

Miscellaneous News-Items

National Convention at Sioux City

The 40th annual convention of the National Bee-Keepers' Association was held, as per announcement, in Sioux City, Iowa, September 22 and 23—last month. The attendance was not so large as anticipated, as there were only about 100 bee-keepers present. As was to be expected, there were a number of new faces, and all the sessions were very interesting and harmonious. There was a good feeling throughout the entire two days.

Perhaps the principal discussion was on the subject of foul brood, which was introduced by several papers, one by W. D. Wright, of New York State, and one by R. L. Taylor, of Michigan, which were followed by another which was quite exhaustive, written and read by Dr. E. F. Phillips, of Washington, D. C. A general discussion followed the reading of these papers in which practically every phase of the subject was treated. It certainly was a live topic. This brood disease among bees has been spreading so very rapidly throughout the country that some very drastic measures must be taken soon, or else the whole bee-keeping industry will be "wiped off the map."

A shorthand report was taken of all discussions, which will be published in pamphlet form in due time, so that each member of the Association will be able to know all that was said and done at this 40th annual meeting of the bee-keepers of America. There are now something like 3500 members in the National Association. There really ought to be 25,000, at least.

For some time the officers of the Association have seen the weakness of the method of nominating the candidates for the annual election. The constitution provides that they shall be nominated by mail ballot in September, and there are so few of the whole membership that really know who would make the best officers, that it is very difficult for them to select. Thus it has come to pass that the nomination ballots have been so very scattering. Out of the total membership there are perhaps not more than 10 percent who respond when invited to assist in nominating candidates. This provision of the constitution was supplemented at the Sioux City convention by the appointment of a committee made up of one from each State represented, which committee was authorized to nominate two candidates for each office, to be placed before the membership for balloting in addition to the nominees made through the prescribed mail ballot. In this way there will be three names to select from for each office at the election in November—next month. That is, there will be 3 candidates for President, 3 for Vice-President, 3 for Secretary, 3 for each of three directors, or 9 candidates in all for directors, as 3 of the 12 directors are elected each year for a term of 4 years. There was an exception made in the case of the General Manager, as practically all the members were in favor of retaining Mr. France so long as he will consent to accept the position and do the work so satisfactorily as he has done for many years.

Personally, we believe that this new departure is a wise move, and would favor an amendment to the constitution so as to provide for such nomination at each annual meeting, rather than what is now required by the constitution. At least, we would recommend this for the nominations for the three directors whose terms expire each year, and also for the General Manager and Treasurer, in case Mr. France should decide to drop out at some future time.

However, we believe that the offices of President, Vice-President, and Secretary should be filled at each annual meeting, as those three officers have to do only with the annual meetings. The Board of Directors with the General Manager and Treasurer conduct the business of the Association between the annual meetings. This was the plan followed regarding the three officers named, before the last change in the constitution, which put the election of all officers and directors in the hands of the whole membership, by mail. It has proven to be quite unsatisfactory, or at least the method of nomination has been more than unsatisfactory.

Next month we hope to have room to refer more at length to this last meeting of the National Bee-Keepers' Association, including a picture of most of the members present at Sioux City, and other matters of personal observation.

New Bee-Locations in the West

It is our intention, when we get our new office into smooth working order, to devote more time to the interests of bee-keepers. We shall be able to furnish reliable information about new bee-localities in the great Southwest, in Western Oklahoma, West Texas, New Mexico, Arizona, and California, in the territory served by the vast Santa Fe railway system. Great developments are also taking place in the Northwest, along the Burlington, Chicago Northwestern, and Chicago, Milwaukee & St. Paul roads. These lines have, within the last few months, made great extensions of their rails, so that much new land has been opened for settlement. Nearly all this development work is taking place in the alfalfa country where bees do well. Most of the great land companies have their headquarters in Chicago, hence it is we can readily find the information desired by personal investigation. We shall aim to get reliable information that can be depended on. We also expect to have a competent bee-keeper visit some of these new territories and report, and we shall also endeavor personally to cover some of this new ground from time to time. Of course, there will be no charge for such services on our part. All we expect is, that our readers will help us increase the circulation of the American Bee Journal in any way most agreeable to them. Much of the information will appear in the Journal, but there are some things that can only be dealt with by private correspondence which shall be confidential, of course. If you are contemplating a move to a better bee-territory, feel free to avail yourself of our services. Henceforth our whole time is the property of our readers.

* * *

Indiana Fair Apiarian Exhibit

At our State Fair the bee and honey industry was well represented, there being four exhibits and each of them very creditable. The exhibitors were Geo. M. Rumler, of Mohawk, Ind.; E. L. Barnes, of Bedford, Ky.; C. M. Scott Co. and myself of Indianapolis. Awards were made as follows:

Bee-Supplies—1st, Walter S. Pouder; 2d, C. M. Scott Co.; 3d, E. L. Barnes.
General Display—1st, Walter S. Pouder; 2d, C. M. Scott Co.; 3d, E. L. Barnes.
Beeswax—1st, Walter S. Pouder; 2d, C. M. Scott Co.; 3d, E. L. Barnes.
Italian Bees—1st, Walter S. Pouder; 2d, C. M. Scott Co.; 3d, E. L. Barnes.
Foreign Bees—1st, E. L. Barnes; 2d, Walter S. Pouder.
Comb Honey—1st, E. L. Barnes; 2d, Walter S. Pouder; 3d, C. M. Scott Co.
Extracted Honey—1st, G. M. Rumler; 2d, Walter S. Pouder; 3d, C. M. Scott Co.
Honey-Vinegar—1st, C. M. Scott Co.; 2d, E. L. Barnes; 3d, Walter S. Pouder.

Mr. Jay Smith, of Vincennes, Ind., acted as judge, and so far as I know each exhibitor was satisfied.

Mr. Geo. S. Demuth, of Peru, Ind., gave lectures, exhibited modern bee-appliances, and showed specimens of foul brood and other diseased brood in glass cases as an educational affair in connection with our new State Foul Brood Law, Mr. Demuth being chief inspector of apiaries.

WALTER S. POUDER.

* * *

The G. B. Lewis Company

It was our privilege to drop in to see the G. B. Lewis Co., of Watertown, Wis., one day last month. Mr. Geo. C. Lewis, the head of the firm which his father established over 35 years ago, was in his office, and was as affable and courteous as ever.

As most of our readers will recall, the large manufacturing building of the firm was totally destroyed by fire June 20, 1909. It is said that three moves are equal to a fire. In this case fire equaled one big move, or was the cause of the G. B. Lewis Co. seeking a larger space, where they will erect perhaps the largest plant in the world for the manufacture of bee-keepers' supplies. It is to have the best possible modern equipment throughout, and will be ready for business about Nov. 15th.

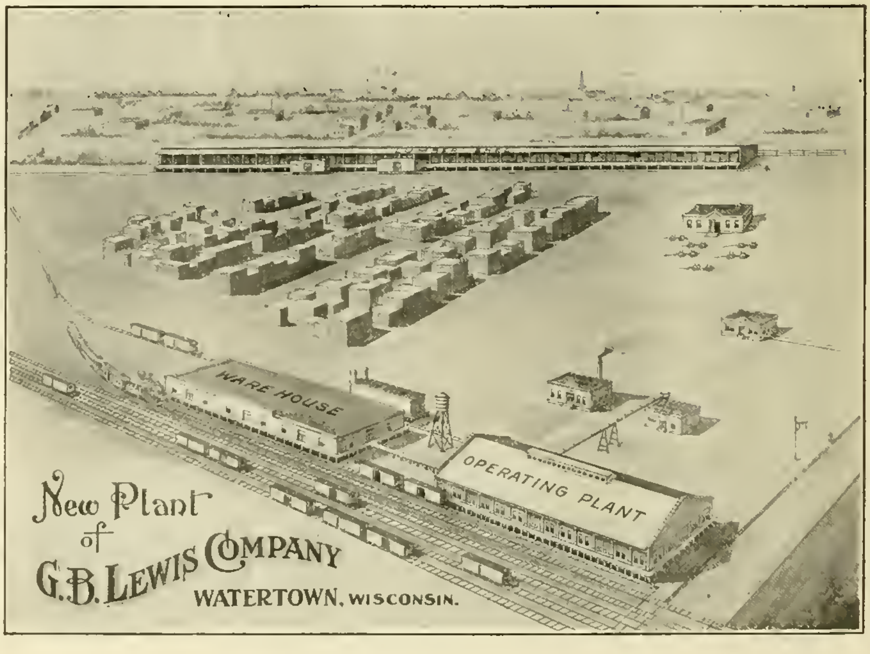
The manufacturing building will have a total of nearly 17,000 square feet, and the warehouse 16,000 square feet; other buildings will bring the total floor area up to about 40,000 square feet; or nearly one acre. In addition to the buildings will be lumber sheds 500 feet long, all of which will be connected with private railroad tracks equalling a half-mile in length. The total ground area to be occupied will be about 5 acres. The space and complete equipment will enable the G. B. Lewis Co. to take care of all the bee-supply patronage that can possibly come to them in the busiest honey season imaginable for years to come. All the machinery, which will be new and of the latest improved patterns, will be run by a private electric plant, the whole requiring about 40 motors, or a total of 300 horse-power.

GEO. C. LEWIS, Pres. G. B. Lewis Co.

When operations are begun the Company will employ 130 people, and more will be added as soon as the plant is well under way. Many people were thrown out of employment by the destruction of the old plant, but work was given as many as possible in removing the debris and other work necessary, so that the cessation of work in the factory was not a total loss to its employes, and the near resumption of activities at the new plant will be hailed with pleasure by the community generally and the employes of the firm.

Mr. G. E. Bacon, who is the chief office assistant of Mr. Lewis, was absent on a very enjoyable vacation, he having just secured a "queen" for his "hive." Our heartiest congratulations are extended to Mr. Bacon. He has attended several conventions of the National Bee-Keepers' Association, and is a most valuable acquisition to the G. B. Lewis Co., with whom he has been connected for 4 or 5 years.

We also congratulate the G. B. Lewis Co. on their new and beautiful plant, which is so richly deserved, in view of their over a third of a century of square dealing with bee-keepers.



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Honey on a Tree-Limb

John Egenes, of Iowa, sends us a clipping from a local newspaper telling about a swarm of bees that settled on a limb of an apple-tree, remaining there through all the heavy rainstorms of the season, and at last accounts had stored about 60 pounds of honey, causing the limb to bend nearly to the ground with its load of sweetness. He doesn't say whether they are the giant bees of India (Apis dorsata) or some other variety. Evidently they are open-air bees, and certainly ought never to die from tuberculosis!

* * *

O. O. Poppleton Visits the North

Mr. O. O. Poppleton, of Florida, called on us last month. He is one of the most extensive bee-keepers in Florida. He has been there for 23 years, having gone from Iowa where he had kept bees for 17 years. During the present season he worked 280 colonies, from which he secured a crop of about 30,000 pounds of extracted honey. It was mostly gathered from a variety of blossoms on the Florida Keys, which are small islands of coral formation. Mr. Poppleton moves his bees on a gasoline launch to a certain district to build them up for the honey harvest, and takes them to the Keyes to gather the surplus. He puts his honey in barrels of about 400 pounds each, and it is practically sold before it is gathered.

Mr. Poppleton is one of the best bee-keepers in this country, although he is not heard from very often through the bee-papers. He lives a very retired, quiet life, practically all of his time being spent with his bees or on his launch. He is a veteran of the Civil War, and for a number of years attended the Annual Encampment of the Grand Army of the Republic. This year, however, he was on a trip North to visit a daughter in Iowa and another in the State of Washington, at the same time taking in the Alaska-Yukon-Pacific Exposition.

It is indeed a pleasure to meet the old-time bee-keepers of which Mr. Poppleton is such a good specimen. He is 66 years old, and says that he has worked harder this year than in any other year of the 23 he has spent in Florida. We met him first about 15 years ago, and once or twice since, and it seems to us that he appears in better health and more vigorous strength than at any time before.

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Our Front-Page Illustrations

The following descriptions of the pictures of apiaries shown on the front page this month will doubtless be of interest:

No. 1.—Apiary of O. K. Rice

I am sending you two pictures of my apiary in the orchard. The biggest shows my house also. It is built east and west and fronts south, with the southwest corner toward the bee-hives. The hives front southeast. The picture was taken just before the leaves came out on the trees. The yard has 36 colonies, and the winter-cases are on all the hives except three. The man examining the frames is myself. I had only about 8 swarms this year. The spring was very late in coming, and no warm weather all summer, so again we will have to hope for next year.

The small picture [No. 1] was taken in the first part of July with the winter-cases and roofs removed, and from the east, or from where the tall birch trees stand. I stand more to the left in the picture with a frame of queen-cages in my hands. In the right-hand corner, that is the west end of the apiary, a lot of winter-cases are piled up close to a spruce stump. I cut that tree in 1883. The stump measures 7½ feet in diameter, 10 feet from the ground. Along the south side there is a line fence and some more birch trees. Near there are more piles of winter-cases. Birch is not native to this country. I got them from the East and planted them years ago. The winter-cases are made 6 inches deep, 24 inches by 20 inches inside; that gives 2 inches for packing all around. Each is separate, mitered and nailed together in the corners. It takes 3 for a single story, and 5 for a 2-story. They have a slant on one edge and rabbet on the other. The roofs have a rim of the same and fit on top. The ones used for the bottom have a slat nailed across in the front 2⅜ inches wide to fit in the rabbet, and 2-inch space, and the rabbet is cut out 16 inches, the width of the bottom-board. The bottom-boards I use are 16x24 inches, and the strips that make the bee-space are clear to the end of the board. The first case rests in front on the bottom-board without blocking the entrance, and in the rear rests on a 4-inch bottom. One slat laid on each side, and one across in the rear stops the packing. I do not expect much honey, if any, this season. O. K. RICE.

Wahkiakum Co., Wash.

No. 2.—A Preacher's Bee-Keeping and Apiary

I have been keeping bees since the year 1900. A friend of mine gave me 2 colonies to start with. They soon increased to 20 colonies. I sold the entire apiary in the spring of 1905. I had been called to the ministry and had been doing some local work up to this time. In September I went to Conference and was appointed to the Weaver circuit, 12 miles south of Oil City, Pa. When I left my home at Colyer, Pa., to go to my new field of labor, two of my friends gave me a colony of bees each, which I took with me, and bee-keeping has been a pleasure to me along with my ministerial work. I have had very good success, with 35 colonies, all in 10-frame hives. I make my own hives, as seen in the picture. The top is made in 2 parts, which feature has several good advantages. In the first place, the supers are in the inside and protected from the hot sun. The first rim is 6 inches high, making it very convenient for winter packing. The top-cover and oil-cloth are removed from the brood-chamber, and the Hill's Device placed over the frames, then covered carefully with burlap and a sack of dry leaves placed on top of that. Then the telescope top, which is also 6 inches, is very easily put on.' Then the top-board and oil-cloth are stored away till spring. I leave the hives on the summer stand without any other shelter, and my bees winter successfully. In fact, I never lost one when packed in this way. Being packed this way gives them the ventilation so much needed for successful wintering. My bees winter so well, and are in such a healthy condition in the spring that I am convinced that this is the secret of wintering bees successfully. (REV.) A. J. HORNER.

Mayburg, Pa., Aug. 17.

Nos. 3 and 6.—The Mount Nebo Apiary

The honey product of the Mt. Nebo Apiary up to this time (Aug. 1) has reached the 800-pound mark—section honey. A recent bountiful rain has refreshed the pastures and meadows and caused the wind-driven forest trees to clap their hands in glee. Bees are still making fairly good time on white clover, which continues to bloom much longer than last year. No doubt the blossoms are from the last year seed.

After locust bloom a dark honey came in from some source I cannot account for, and about half of the honey in the apiaries of this section seems to be of a dark color.

I gathered some pictures in beedom on a photographic trip across those mountains to a country town. On trips to different apiaries since May, investigation proved that even these mountain localities have some marked facilities for honey-gathering.

One picture I send [No. 3] shows the little girl and myself looking for the queen, and was snapped by my driver one afternoon in May. This was in the heart of the very summit of Negro Mountain. The little girl's father had gone to a new barn-raising of logs. She had difficulty to get the swarm which is clustered on the small plum-tree, to remain in the hive, when we happened there. She showed us the colony that had filled 5 supers of honey last year. She went about the hives as if the bees were gentle as kittens, as will be seen by her garb and the lilac flowers on her hat, and said, "They are not a bit hasty." I had found the queen and had her in my hand.

The other picture [No. 6] is the Boaz Trent apiary, at Boynton, Pa. On July 1st I found a golden Italian colony at work on its sixth 30-pound super, making a total of 180 pounds for the season up to that time. The glass covers over his sections instead of cloth, the gentleness of his bees, the split sections, the arrangement of his hives under his apple-trees struck me most favorably in his bee-yard. The glass cover was not laid flat on the sections, but had a little wooden block, about a half-inch cube under each end of the glass to afford a bee-way between the top of the sections and the glass. There were no travel-stains on top of the sections nor wax, and the owner claimed that when they had a passage over the top of the sections there were but very few pop-holes in the honey. My prejudice had whispered to me that perhaps the split sections are only a new fad on the market, and are not quite as good as the manufacturers "blow them" to be. But now I believe emphatically that the split sections are the thing. I'd say send a sample section to every bee-man with other goods. Seeing is believing. The apiary spoken of above had 6 colonies in 1908, spring count, with a crop of over 700 pounds. In 1909 the spring count was 10 colonies; estimated crop over 1200 pounds.

Garrett Co., Md. L. J. BEACHY.

No. 4.—Apiary of Mr. Mathews

I am enclosing a picture of myself and bees. The bees are from a queen I got last year. Where is the old queen? The hive next to me has the colony I introduced the queen to, and the next one is the first swarm, and so on. I did not see the queen in the first swarm, but saw all the rest. The second queen was a match for the old queen. The other two were darker, and the worker-bees in the old hive I think are a shade darker than the rest. Last spring I had 2 good colonies of bees—the Italian and one black colony. The blacks swarmed once and the Italians cast 4 swarms, and the last swarm of the Italians is stronger than the black swarm. My bees are doing very well. There is not much bloom this year, but we hope for a better honey year next season. I hope the honey-flow is better in other localities. J. T. MATHEWS.

Saline, Mo., Aug. 3.

No. 5.—Apiary of Mr. Tyler

I am sending you a view of my bee-yard taken from the southeast. It shows my neighbor's cottage across the street. The shop I have built since I was burned out on July 6. I have 30 colonies. We had no white clover honey. I will probably have 150 pounds of surplus from heartsease.

San Jose, Ill., Aug. 23. FRED TYLER.

No. 7.—Apiary of John Seidelman

This picture shows the apiary of John Seidelman, of Oswego, Ill., and his little bee-keeper helpers. It is indeed a neat apiary.

No. 8.—Apiary of Mr. Lampher

I am sending a picture of my apiary. I like the American Bee Journal very much, but I have kept bees ever since I was a small boy, so I have learned their traits so well that I go by that mostly in taking care of them, but I like to read of others' experiences with them. I make my own hives. I use the closed-end frames made the same size as the Hoffman. I use mostly 8-frame size. This has been a very poor season. I usually get from 2 to 6 supers of honey from a colony, but 4 is the most I have had this season, and some haven't stored any surplus. We have only clover here, and this season there hasn't seemed to be much honey in it. We have no basswood here now, as it has been all cut for lumber, and we have no buckwheat in this whole county that I know of. We have hardly any fruit-bloom here. The two last seasons have been very dry so the clover hasn't done as well. We generally have an abundance of sweet and alsike clover. We get a very nice quality of honey.

North Troy, Vt., Aug. 2. A. O. LAMPHER.

Connecticut Convention

The fall convention of the Connecticut Bee-Keepers' Association wlll be held Saturday, Oct. 16, 1909, in Room 50, State Capitol, Hartford, beginning at 10:30 a.m. No bee-keeper can afford to miss this meeting. A special invitation is extended to lady apiarists.

JAMES A. SMITH, *Sec.*

Box 38, Hartford, Conn.

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N. Illinois and S. Wisconsin Convention

The annual meeting of the Northern Illinois and Southern Wisconsin Bee-Keepers' Association will be held in the Court House in Freeport, Ill., on Tuesday, Oct. 19, 1909.

B. KENNEDY, *Sec*

Cherry Valley, Ill.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

The Production of "Bulk," "Chunk," or "Canned" Comb Honey

No. 1.—INTRODUCTORY.

The more the writer has watched the honey markets of both the South and the North, and compared the prices of both, the more I have been convinced that the Southern bee-keeper who produces what is known as bulk comb, "chunk" honey, has the better end of the argument when it comes right down to the most-dollars-and-cents standpoint of comb-honey production. Even though it be granted that we are far behind here in the South, it is coming to be a well-known fact that there is more money in following a method that some of the Northern bee-men have called "going back to 30 years ago" of producing comb honey; and this method does not only apply to Southern bee-culture, but would make bee-keeping everywhere worth millions of dollars more if it were adopted universally. It is a most sensible way of producing comb honey, although the most of the fraternity have looked down upon such slovenly, old-fashioned methods.

I well remember when this subject was first mentioned, we were laughed at and ridiculed. Even many of the Texas bee-keepers ridiculed the idea, while they kept on producing section honey. Some of these who saw me during the first two or three years, packing comb honey in this way, scoffed at the idea, and predicted that we would soon abandon it and get back to where we belonged. Did we? No, emphatically, *no!* Instead, all the other fellows came over to where *they* belonged; they, one by one, began to produce comb honey in a more sensible, more certain, and more profitable way. The result is, that today there is no other way in Texas. The sections of honey produced in our State can be counted, and these are produced by a *very few*, the most of whom are often beginners who are not yet informed, or who have been led astray by supply-dealers' catalogs, which give pre-eminence to the hive with the pretty sections. Pretty things they are, but let me tell you (but you would not believe it), that the production of section honey has cost our great United States millions upon millions of dollars *in wastefulness.*

Just figure for a moment the enormous amount of basswood required alone to supply only the sections and shipping-cases, with glass thrown in. Then figure the labor that is wasted on every pound of honey thus produced, from the making of these sections and cases until they have served their purpose only to be thrown away—wasted. Study a little the expensiveness of the whole thing—waste again. Nor is this all the waste, for we must add to this the great—yea, the enormous—loss of honey that is *not obtained,* because the bee-keeper insists on forcing his bees to produce honey in sections. There is a great loss in this respect, which none can deny. Careful experiments will bear this out. In this we must also include the loss of time and extra labor with swarms (as this exists to a greater extent if section honey is produced), and the lesser amount of marketable product. Here again a good deal of waste is met with if many unfinished sections result, no matter what method be pursued in disposing of them. Scraping each individual section, assorting and grading them, and then the necessary care that must be exercised in casing them, are other time-wasters.

A further waste is that of extra crates necessary for shipping, and the extra amount of care and packing. Nor is this all, for the freight-rates are considerably higher, "double first-class rates" over fourth-class rates at which bulk comb honey is shipped. To this must be added the greater danger of smash-ups and losses in transportation, which, here in the South, on account of the long distances and the greater heat, was the real reason why honey-producers were forced to turn away from section honey in disgust.

Taking all these things into the most earnest consideration there is waste, waste, in my estimation at every turn in section-honey production. Therefore, was I to be blamed for adopting methods of producing comb honey that to many seemed like going back to 30 years ago when "chunk" honey was the thing? No. That time has passed now, and "chunk" honey, as it is often called, or *bulk comb honey* as we know it, will become known more and more, and its production will advance and spread until we shall see it in all parts of the world. That a beginning has already been made in this respect is evidenced by occasional items that appear in print in the journals of the last few years, showing that there are scattered, here and there, bee-keepers who produce it on a small scale, even in some of the Northern States.

Besides this, the scores of letters relative to this subject that I have received from all parts of the country, show that a great interest has already been taken in the matter, and that bulk-comb-honey production will be adopted by a large number of bee-keepers. These letters pertain to information regarding one phase or another of the hives, frames, etc., used, and the method of production, manner of packing, and the kinds of packages used.

Another proof of this fact is that one of our foremost bee-supply manufacturing firms has advertised to contract for a large amount of choice comb honey in shallow frames, expecting to use it year after year. And right in line with this article they say in the same advertisement, "When you are once supplied with the proper equipment you are at no further expense for supplies each year except for foundation. You save the cost of sections and shipping-cases if you produce comb honey," etc.

Just opposite this advertisement we find the following head-line, "SECTION FAMINE." Under this, after referring to orders for sections, etc., we read:

> "We seem unable to turn these out fast enough to supply the demand. We make upward of 100,000 a day. Our surplus stock is exhausted not only here at the factory, but to a great extent with our branch offices and dealers, and it is impossible to supply them all at once. We are arranging to increase our output, if possible, by a double shift of men to run the machines," etc.

This is to show the enormity of the number of sections used up annually; yet this is not the only factory that grinds them out by the millions, year after year. Is it any wonder that several times there have been mentioned a fear that the supply of basswood timber for sections and shipping-cases might soon be exhausted? And will the honey-producers keep right on along the same lines of producing section honey until that time comes, or will they change to some other more profitable way? This is an important question that will be considered more seriously sooner or later. Having anticipated this, and knowing that the production of bulk comb honey, as it is practiced here in Texas, has something to commend it to all of the rest of the country, because it would be more profitable all around, as there would be more honey produced and more people would get a taste of it, I have promised to write a series of illustrated articles on this subject to follow this introductory. I believe that there is a great future for honey produced in our way, and that there are more real dollars and cents to be made out of it than by the way most of the comb honey is now produced. L. H. S.

Some Characteristics of the Season

As I grow older I find I do much less actual work in the apiary than I formerly did. From long years of experience I have learned to diagnose from outside appearances, which saves many unnecessary manipulations.

The mesquite — our surest honey-plant of a very dry year, such as we are having the present year—has been a flat failure this year. This was owing to the worms destroying the buds as fast as they formed on the trees. This is a new pest for the bee-keepers, caused, no doubt, from the great destruction of the little birds that is continually going on here in the South. The cotton-bloom and sumac are our last hope for honey in this locality for the present year. There is no "broomweed" this year, and if we don't get rain soon both the cotton-bloom and sumac will be a failure, and we will have to score our first flat failure in a honey crop in 19 years. So much for drouth, heat, and insects.

This is one of the years that honey-dew was welcomed in this locality. Had it not been for the so-called honey-dew, we would have been forced to feed at least another month. This would have meant several more barrels of sugar.

This year has proved very plainly what I have several times before stated in the various papers I have written for. That is, it is not all in the amount of bloom we have that insures a honey-flow. We have seen the whole face of the earth covered with honey-producing plants, and yet the bees had to be fed to prevent starvation; and in a few instances the weather conditions seemed favorable for honey secretion, too. The present year there has been less bloom than I can ever remember seeing, and still some few colonies that were well supplied with old pollen of last year's gathering, stored some surplus honey. (There has been a scarcity of pollen the whole spring here, so much so that it has been impossible to keep the bees up to the proper strength for honey-gathering.) Could I have had all up to proper strength, I should have secured a small crop of honey, and it was not honey-dew either.

Rescue, Tex. L. B. Smith.

The Texas Convention

The Texas Bee-Keepers' Association held a very profitable meeting at College Station in connection with the Farmers' Congress which convened July 27 to 30, 1909. The meetings of the bee-keepers were invaluable to the members present, and better prepared them for meeting their apicultural struggles of the future. Many questions were discussed that were very interesting to the veterans as well as to the younger members of the apicultural craft. The meeting was harmonious throughout, and a brotherly spirit prevailed that made all feel that it was a pleasure to be there.

Members of the Texas State Bee-Keepers' Association.

T. P. Robinson, of Bartlett, Tex., was elected president; and W. T. Childress, of Batesville, was elected secretary-treasurer.

The convention adjourned to meet next year as usual with the Farmers' Congress at College Station.

Something New for Bee and Honey Exhibits at Fairs

T. P. Robinson, Bartlett, Tex.
Pres. Texas Bee-Keepers Association.

As there will be fairs and fairs for centuries to come, and as all of these in time will have their apiarian exhibits, it has occurred to me that some of our work of this fall would be not only of interest but of some benefit, and not only to the exhibitors of bees and honey, but to the fair associations also.

Those who have had experience know that it is a difficult task to send bees in glass observatory hives and honey in glass packages without having trouble from leakage *en route*, especially when such exhibits are sent long distances. Besides this, the shipping expenses are very high on glass packages, and they must be packed into very bulky boxes or crates to go safely; and, even then, where rough handling at many transfer stations occurs, some of the glass is broken.

It is very exasperating to the exhibitor, and also to those who take charge of the stuff at the fairs, to find leaking honey, or the glass of observatory hives broken, and most if not all of the bees escaped. It is no agreeable task to wash honey jars and bottles, especially if these are labeled.

Another trouble that has to be overcome to get a larger number of exhibitors, is to help them to get the proper containers in which to exhibit their stuff. There are many annually who have either very fine bees or honey worthy the place at any fair, but which does not find its way there because it is difficult to procure the necessary material to put it in an attractive shape for exhibition.

Having all these things in view, the following letter has been sent out to a number of bee-keepers who, it was thought, may be able to furnish some of the things mentioned. The letter is self-explanatory:

> Dear Sir:—I am in Dallas preparing for the biggest and best bee and honey exhibit that the South has ever had. In this we want your co-operation. It will not take very much of your time nor be any great expense to you, yet you will help us do a wonderful thing toward advertising our bees, queens, honey and wax, and other by-products of the apiary.
>
> We are going to have the biggest show of bees of the different races in one-frame observatory hives that the world has ever seen at one place, and for this purpose we are getting made up here a big lot of the glass hives ready to receive the bees that are sent here. All you have to do is to send the one-frame nuclei in their shipping-cases, and we will put them into the glass hives and care for them in the best possible manner while they are here. In this way we will get a great number of competitors to show their best stuff, and it will be an advertisement for all who participate. We are writing you this at the present time so that you can prepare your best bees and have them ready to ship to us 4 or 5 days before the opening of the fair.
>
> We also want the greatest number of exhibits of different kinds of honey, and we have struck on the following plan: We will procure a large number of white flint glass jars holding 3 pounds each. All that will be required for the exhibitor will be to send enough honey (36 pounds) in the regular 60-pound cans. We will put the honey in the jars, properly labeled with the number of the exhibitor. After the fair all of the honey will be sold, and that sent by the exhibitor paid for. This will save the risk and expense of shipping glass packages.
>
> As there are premiums on white and amber honey, two cans can be shipped in one case by freight. Include with this shipment other things named in the premium list enclosed—comb honey, wax, vinegar, etc. All these shipments should be sent early to arrive here in due time, while bees and queens are rushed through by express later. Address all shipments and send all bills of lading to me.
>
> Write me at once a list of what you will send us, so we can arrange for it promptly. Remember the dates of the fair are Oct. 16 to 31, and all exhibits must reach us by the 15th. We will take the best care of them here.
>
> Louis H. Scholl,
> *Supt. Apiarian Dept.*

It is hoped in this way to obtain a greater number of exhibits; and to make it easier and less expensive to the exhibitor. We have every confidence in this plan, although it is our first experience along that line. Whereas there have only been a dozen or 20 observatory hives of bees on exhibition, there should be 50 or more when the glass hives are furnished by the Fair association, which keeps them as permanent property from year to year.

The plan for the honey exhibits should make possible a much larger showing also. If the necessary jars are procured in gross lots or more, they will not only be cheaper but the exhibits will be of more uniform sizes. Another advantage gained is that the jars being filled here, and placed on exhibition, will present a fresher and more sparkling appearance than when honey has been bottled for any length of time. Being specially equipped right on the grounds for doing this, makes it an easy matter. Thus, not only heavy shipping expenses and breakage of glass *en route*, together with the difficulty of obtaining suitable containers, are done away with, but the stuff will come on exhibition presenting a uniform and neat appearance. This should appeal not only to the exhibitors, but also to the Fair associations and their superintendents who desire to create more interest in bee and honey exhibits.

Canadian Beedom

Conducted bv J. L. BYER, Mount Joy, Ont.

Honey Crop and Prices

Along with good crops, the Canadian bee-keepers have had good prices as well—truly a combination that even the veriest pessimist could not grumble over. Buckwheat honey shows a tendency to be a little lower in price than for a few years, this being explained by the rather limited demand for dark honey in Canada. While the clover is sent in every direction, nearly all the buckwheat goes East, so naturally the market is more easily supplied for the darker article. It has never been clear to me as to why our biscuit factories use no dark honey, as, over the line, I understand that the National Biscuit Co. and other concerns use large quantities of all the darker grades of honey. However, here in Ontario our biscuit manufacturers will have nothing but the best of clover honey if they can get it, and when that is too high they send off to Jamaica for logwood honey which is quite a white article.

Drouth and the Clover

Some of those who are saying, "I told you so," when the matter of drouth killing clover is mentioned, would better explain why Ontario has a real good crop (barring a few localities) this season, after one of the worst drouths last year that has ever been experienced. To help them out a bit, I might say that the most of the honey referred to was gathered from the alsike clover. However, it was not last year's drouth that stopped the white clover from blooming in this section, as last spring the clover showed up as well as ever in April and May. Since the latter end of May, though, the drouth in Ontario has been very severe and the clover never came to the blooming stage. Alsike in the cultivated fields stood the dry weather better, and yielded very heavy for a few days. The drouth this year is worse with us than last season, as it came earlier, before the fresh-seeded clover got rooted, and now the result is that here in our vicinity, at least, prospects are slim for a crop of clover next year. However, it is too soon to borrow trouble, and perhaps there may be enough for a crop of honey again. Anyway, worrying about it would do no good, so we will keep on (as a bee-keeper always does) hoping for something to turn up even if the clover should fail.

A Bee-Tight Honey-House

Editor Hutchinson quite properly tells the writer in the last Bee-Keepers' Review that a honey-house should always be bee-tight, and he says that a bunch of lath and a roll of building paper will do the job cheaply.

Agreed that the bee-tight house is a good thing to have, yet there is no question but that there are a whole lot of apiaries in the country that have not this requisite, and a number of these bee-keepers get along fairly well without any robbing, too, by using good judgment in their manipulations. As to the paper, I want none of it, as the red squirrels are such a nuisance here that past experience with the paper has disgusted me with its use. At one time I had a good-sized honey-house completely "peeled" inside of a week, and two or three other times all of our papering was ruined so as to be of no use as a bee-excluder.

It is easy to make a building bee-proof, a little harder to make it *mouse*-proof, and almost impossible to make it *squirrel* proof. At the one yard in particular I have to wage a constant warfare against those little destroyers, and while I dislike to kill them, yet I find it almost the only thing that can be done. Within the last ten days I have caught two in traps, and there are lots more still around the place looking for trouble.

A Good Buckwheat Swarm

The chap who wrote that ancient rhyme about a swarm of bees in July not being worth a fly, either did not know what he was talking about, or else he never lived and kept bees in a buckwheat section. I might as well confess in justice to the ancient rhymer, that previous to the past few years the assertion was pretty true in our locality in the majority of seasons. With such a negative value placed on a July swarm, we might reasonably assume that a swarm in August would be still more worthless, yet on Aug. 13th a large swarm issued at the Altona yard, and it not only stored enough for winter, but has put a little over 50 pounds of honey in the supers as well. This is my first experience in the matter of "buckwheat swarms," and naturally I am well pleased with this colony's good showing.

The yard in which this swarm issued was very strong for the buckwheat, only 4 out of the 60 colonies having swarmed during the season, and the average for buckwheat was 65 pounds per colony. Not so very much, yet this is the heaviest yield I have ever had from that source since they started to grow it in this section. What I was trying to come at, was to show that this young swarm actually stored more honey from the buckwheat than was the average in the yard, *i. e.*, when the amount stored in the brood-chamber is taken into account. While I am glad to cut out swarming as much as possible, yet I have always contended that if a swarm issued at just the *right time* as much honey will be secured as though there had been no swarming; and the bee-keeper is the richer by one more swarm for each one that goes through the program. But the trouble is, that we cannot always have the swarms at the *right time*, and so I suppose we will continue to test non-swarming plans with varying success in the future as we have done in the past.

The Long Tongue, Red Clover Fad

Hurrah for the long-tongued bees that will work on red clover! Now, don't all speak at once and say we've got them, else there will be so much confusion that we will not know just whom to buy our queens from. The fact is, that nearly any bee-keeper in this part of Ontario can (*this year*) honestly claim to have bees that store surplus from red clover, as about half of the buckwheat (?) honey through here this season has been gathered from the red clover.

We have been, and are at the present time experiencing even a worse drouth than last year, but owing to copious showers just after the clover was cut the first time, quite a heavy aftermath was started. Whether because of the shortness of the tubes of the clover, or because of their being extra full of nectar, I know not, but be the cause what it may, the clover is swarming with bees gathering nectar and pollen every warm afternoon. As I have Italians, blacks and Carniolans in the home apiary here, I have had a good chance to observe the different races as to how they work on red clover, and after watching them for days on the clover, as well as comparing super-work, I have no hesitation in saying that the long-tongue idea, in so far as it refers to the different races, is pretty much a humbug.

On the flowers at work, no difference could be seen in the numbers of bees present, as all three races seemed to be about equally represented. The Carniolans stored the most, with the Italians second, they being slightly ahead of the blacks. "There," some one who worships the Italians exclaims, "that proves that the Italians have longer tongues." But as to how they will explain the position of the Carniolans, will be left for us to guess at.

Let me here digress to say that the Carniolan race of bees has been libeled beyond measure by certain breeders of Italians, without any just reason whatever. In my humble opinion, the Carniolans stored more from the red clover than did either the blacks or Italians, simply because they were ever so much more populous than the others. The Italians stored a little more than the blacks because they will work better in a poor flow than will the native bees. No doubt it will be admitted by all who have tried the different races, that in a heavy flow of honey the blacks will store just as much as will other races, but when nectar is scarce, they are more easily discouraged, and lack the "sticktoitiveness" of the other races.

This unfortunate trait explains, to me at least, why they stored a little less than did the Italians, and I do not for a moment believe that the length of tongue had anything to do.

Not that I would try to discourage research along the line of improvement in bees for the purpose of working on red clover, or for the propagation of any other valuable traits in our bees, but one thing is certain that no change of any account is going to be made in a few years, let alone for a few *months*, as a whole lot of queen-breeders tried to make believe was the case only a very few years ago. After all is said and done, it seems more than possible that more headway would be made in experimenting along the line of producing red clover with shorter tubes, than in an effort to get bees with longer tongues; but up to the present no Burbank has seen fit to carry out any work in this line.

MILTON
Convention Proceedings

The Pennsylvania Convention

The 6th annual convention of the Pennsylvania State Bee-Keepers' Association was held at Lebanon, Pa., on Sept. 8 and 9, 1909.

Quite an enthusiastic body of members and visitors were present, among them being Prof. H. A. Surface, president of the association; Vice-Presidents Beard and Hornor, active respectively in the Lebanon and in the Philadelphia associations; Dr. E. F. Phillips, in charge of apiculture at Washington, D. C.; Dr. S. P. Heilman, secretary of the Lebanon County Agricultural and Horticultural Association; Mr. Wm. A. Selser, widely known in apicultural circles; Messrs. Hahman, Rambo, Cassel and Snyder of the Philadelphia Association; Mr. J. H. Miller, ex-president of the Lebanon Association, and Mr. E. L. Brown, their present efficient secretary; Messrs. Hacker, Shilling, M. F. Smith, Wengert, Klees, and others of Lebanon or near-by points; Messrs. Watson and Shirk, of Hanover; Prof. H. C. Klinger, for two years president of our Association; and a number of ladies, among them being Mrs. H. K. Beard and Mrs. M. L. Laudermilch.

The program was executed as follows:

WEDNESDAY AFTERNOON—BUSINESS.

President's Address, Prof. H. A. Surface, State Zoologist, of Harrisburg.

Election of officers.

WEDNESDAY EVENING.

Address of Welcome by John H. Miller, ex-president of the Lebanon Bee-Keepers' Association, of Myerstown.

Response by the President.

"The Distribution of Brood Diseases in Pennsylvania," by Dr. E. F. Phillps, in Charge of Apiculture, Washington, D. C.

"Origin and Progress of the Lebanon Bee-Keepers' Association," by Mr. E. L. Brown, secretary of the Association, of Lebanon.

"Apiculture in Juniata County and Vicinity," by Prof. H. C. Klinger, ex-president of the State Association, of Liverpool.

"Fruit and Honey—Can What You Can," by Mrs. H. K. Beard, of Manheim.

THURSDAY MORNING.

"Accomplishments and Aims of the Philadelphia Bee-Keepers' Association," by Mr. F. Hahman, of Philadelphia.

"Qualities to Be Secured in Queen-Breeding," by Mr. Penn G. Snyder, of Swarthmore.

"Extracted Honey," by Mr. Harold Hornor, of Jenkintown.

"Honey-Dew and the Pure Food Law," by Mr. Wm. A. Selser, of Philadelphia.

"Conditions of Honey-Production in Lebanon and Lancaster Counties," by H. K. Beard, of Manheim.

THURSDAY AFTERNOON.

At the apiary of Mr. Wayne Shilling, of Lebanon, demonstrations were given in the methods of handling bees, by Prof Surface and Messrs. Shilling and P. G. Snyder.

Queen-hunting contests were entered into by Messrs. F. C. Miller, E. D. Kurtz, E. F. Hackett and O. H. Smith.

In the President's address Prof. Surface gave certain fundamental rules for the bee-keeper to observe, the "golden rule" being to keep every colony strong. The address brought forth a rich freedom of discussion.

The result of the election of officers was a continuance of the officers of the past year, namely: President, Prof. H. A. Surface; 1st vice-president, Mr. H. K. Beard; 2d vice-president, Mr. Harold Hornor; 3d vice-president, Mr. Geo. H. Rea; Secretary-Treasurer, A. F. Satterthwait.

Dr. Phillips illustrated his address on the distribution of brood-diseases in Pennsylvania by the use of a map of the State, with colors showing which counties were known to be infected by the one or the other of the two more destructive diseases, which counties had both, and which had none.

Mrs. Beard had a number of samples of preserved fruits, illustrating her paper on the canning of fruits and vegetables with honey. Mr. Selser showed samples of honey with varying proportions of honey-dew, and urged every bee-keeper to make himself safe from loss by the use of honey-dew honey on the market or in the winter stores. Much evidence was shown of wide-spread loss from the gathering of honey-dew this season.

The historical sketches of the Lebanon and of the Philadelphia Associations were valuable, as were also the several other papers.

Following the pre-arranged session at Mr. Shilling's apiary, quite a number of members visited the orchards of Mr. H. C. Snavely, ex-president of the Pennsylvania State Horticultural Association, resident near by, and were accorded a most liberal welcome. These orchards afforded an excellent object lesson of the possibilities of producing choice fruits, irrespective of adverse conditions when right methods are wisely applied.

At a brief session of the association, held at the orchards of Mr. Snavely, at Cleona, Pa., the following resolution was adopted:

Resolved, That we thank Mr. Henry C. Snavely for his courtesy and liberality in welcoming us at his orchards and explaining at length his methods in securing most gratifying results in the production of fruits.

The following resolutions were presented and adopted during the main sessions of the convention:

At a meeting of the Pennsylvania State Bee-Keepers' Association, in annual convention at Lebanon Sept. 8 and 9, 1909, it was agreed that while greatly inconvenienced in our business by the passage of the late National Pure Food Law, on account of the requirements of said law compelling us to brand accurately, if at all, each bottle and can of honey put up, with the exact flowers or honey-flow from which it is gathered, thus entailing the purchase of new and the relabeling of old packages, this has been a great benefit to our business, establishing more confidence in the honest and correct labeling of our product, and more confidence between the producer and consumer.

Therefore, it is resolved that we highly commend the action of Dr. H. W. Wiley in securing this Pure Food Law, and his untiring efforts to have it enforced in such a way as to make it highly beneficial to the consumer. It is further resolved that we do all in our power to assist Dr. Wiley in his noble efforts to have an honest brand on every package of food put up.

Further resolutions, prepared by the Committee on Resolutions, were adopted as follows:

Resolved, That we thank the Lebanon County Bee-Keepers' Association for their kind hospitality in entertainment at this our annual meeting.

Resolved, That we thank the press for their courtesy in publishing the proceedings of the meeting.

Resolved, That we thank the Department of Agriculture at Washington, D. C., for the assistance they gave us through the work of Dr. E. F. Phillips, in the investigation of bee-diseases.

Resolved, That we thank the President and other officers of the Association for the faithful performance of their duties and their efforts in trying to secure the passage of a foul-brood law.

Resolved, That a copy of these resolutions be sent to the respective parties mentioned in these resolutions, and to the Lebanon press for publication.

Respectfully submitted,
Wm. A. Selser,
H. C. Klinger,
John H. Miller,
Committee.

The convention adjourned, the Association to meet next year with the Philadelphia Bee-Keepers' Association in their usual meeting place—the Philadelphia Commercial Museums.

A. F. Satterthwait, *Sec.*

Contributed Articles

Heavy White Clover Honey-Flows--How Often?

BY C. P. DADANT.

The above question is propounded to me for reply at the National Convention by an Illinois apiarist who reports a very good flow from white clover this season, and desires to know how often he may count on such crops.

The fact that our enquirer has had an extra-good flow from white clover, while in most places the flow has been from honey-dew this season, is sufficient evidence that the large flows of honey are accidental, and that no one can rely on them at stated intervals.

My recollections go back as far as 1868, which, if I remember right, furnished our first big crop of clover honey. At one time I kept a diary of the bee-products harvested by us, but with time I neglected it, and have been unable to find it. However, I can perhaps name most of the years of large crops in this (Hancock) county. They are about as follows: 1868, 1869, 1877, 1878, 1882, 1883, 1884, 1889; then a long space with indifferent crops; then again 1903—our banner year—and then 1908.

It is hardly necessary to say that the flow of honey depends upon so many conditions that it may be good in one place and bad within a very few miles. For instance, one rain secured at a critical time may insure a strong flow, while the flow will be unimportant a few miles away where the ground has remained dry. In the same way, the wintering of a large field of clover may depend upon the fall rains, or on the snow, sheltering plants that have been weakened by drouth.

Some apiarists have attempted to explain the cause of irregularities in the yield of honey, not only in white clover but in other blossoms. Up to this time no very plausible explanation has yet been made. We often see the pastures white with clover bloom, while very little honey comes into the hives. Moisture, heat, electricity, distance of pasturage from the bees, age of the honey-plants, previous crops, etc.—those and many other propositions have been advanced in explanation of the failure or success of the honey-flow without proof. I have myself had the presumption of prophesying a big crop, when everything looked favorable, with the result of having the mortification of failure instead. I have come to the conclusion of saying. When all is peaceable prepare for war; but whenever things look discouraging take heart, for success will soon come if you persist.

The years of 1869, 1878, 1883, 1884, 1889, 1903 were years of tremendous crops, something like 200 pounds per colony average having been gathered during the last named. We have had numerous seasons of fair crops and 4 or 5 of entire failure. In 1879 the bees stored nothing either from clover or fall blossoms. They worked on fruit-juices, and those colonies which were allowed to retain this bad honey died during the following winter.

The French have an old popular adage which says: If you wish to see your wealth go up and down, put it in sheep or in bees. This was originated at a time when the inside of the hive was a sealed letter to all, even to the naturalists who long regarded the queen as a "king," and thought that the drones laid the eggs. At the present day, with our intimate knowledge of all that happens in the hive, the keeping of bees is no longer a game of chance, and I dare say it is the same with sheep. But since we cannot control the weather, since we are even unable to tell just what weather is most favorable to a honey crop, it is out of the question to make any assertions of future successes or failures. But of all the wise men who have tried to forecast possible large crops, I have the most faith in the one who said that the best white clover crop comes when the clover is in its second year, following seasons of entire dearth. I have noticed this several times, but, of course, there had to be a sufficient amount of moisture to keep the plants growing.

It is not only in Illinois that the irregularity of crops and the inability of saying what causes good or bad results is apparent. The irrigated districts of the arid West, which produce alfalfa in abundance through the artificial soaking of the ground regularly, are in no better position than we are, and their crops are about as irregular as ours. In California it is customary to say that if they have enough spring and winter rains, the crop of honey is assured; but a year or so ago I received a letter from one of the leading apiarists there, saying that all his ideas of what constituted satisfactory conditions for a crop had been overthrown by the failure he had just experienced, as they had had abundance or rain at the proper time, but very little honey as an ultimate result.

Should we consider these irregularities in yield and our inability to remedy the conditions as tending to discourage the pursuit? Not in the least. There is no business, no financial enterprise, no mechanical or industrial pursuit, that is not dependent for its greater or less success upon circumstances entirely beyond the control of man. The financial panic of 1907 has been explained away by thousands, but how many had foreseen it? The price of wheat, corn, horses, goes up and down like the billows of the ocean, generally in an unexpected manner; so do the crops.

In the eighties I had apiaries numbering some 500 colonies in all. With the press of business we lowered this amount to about half during the nineties. We are again pushing our apiaries upwards, so those who read these lines may know that I am taking some of the medicine which I recommend. I have found bee-culture profitable, even though we have not always done the things which we knew were needful. The man who takes good care of his bees, who does not get too enthusiastic when a big crop comes, and never loses courage in disastrous years, is sure to secure banner crops once in a while, whether of white clover or of such plants as the locality produces.

Hamilton, Ill.

Rheumatism and Bee-Stings

BY DR. C. C. MILLER.

Dr. A. F. Bonney, on page 300, discusses the effect, or the non-effect, of bee-stings on rheumatism, and the general trend of his remarks leaves the impression that it is only among the laity that there is any sort of notion that stings can benefit those who suffer from rheumatism, the profession knowing better.

It is only fair to say that across the water there have been given detailed accounts in medical as well as in bee journals, of cures through bee-stings administered by regular members of the medical profession.

I am not saying this to insist that Dr. Bonney is all wrong. I don't know. I am only saying that the profession is not a unit in agreeing with him.

Dr. Bonney has been stung much and has rheumatism. I have been stung a good deal and have no rheumatism. Before I worked with bees I suffered severely from rheumatism, but for many years I have not had a twinge of it. Yet, like Dr. Bonney, I can't be sure that stings have had anything to do in the case. To be sure, my testimony ought to count for a little more than his. As he says, he is older, and ought to suffer more from rheumatism, stings or no stings. On the other hand, at the time when I should be hobbling around on crutches with rheumatism I am scot free, and like many another quack I can say, "If it isn't stings, what is it?" But, then, I don't know.

It may be well to say that the doctors

who report success with stings apply them in such heroic doses that some might think the remedy worse than the disease.

Honor to Whom Honor.

On page 300, C. P. Dadant speaks of percolating syrup "by the method first recommended" by me. That was not original with me. I don't now believe there's any great advantage in it. Sugar stirred in water till dissolved is as good as anything.

On page 310, James Wolfe mentions the "Miller division-board feeder." G. M. Doolittle was the man bright enough to think that up.

Marengo, Ill.

Section Comb Foundation--A Review

BY G. M. DOOLITTLE.

A few evenings ago a bee-keeper called me up over the long-distance telephone to ask how long comb foundation for the sections had been known, as he and another bee-keeper had been in a dispute over the matter. I told him that I thought it was about the year 1875. Afterward I was not so sure about the matter, so I hunted up what I could in my old diaries regarding this. Then I thought perhaps there were others of our younger bee-keepers who would like to know regarding this foundation which has become an article of commodity till hundreds of thousands of pounds are used throughout the world.

Near the close of the honey season for 1875 I received from William Hoge, of New York City, a package of comb foundation to use in the surplus boxes, as sections were not then known by that name, he saying as an explanation, that a great saving was to be made by the use of it, as the bees would draw the side-walls out to full-length cells, thus making the combs out of the wax in the foundation. As it was then claimed that it took at least 20 pounds of honey to make one pound of wax as produced by the bees, a saving of $4 per pound was gained, as honey sold readily at 25 cents per pound in those days, and a pound of foundation cost but $1. This was supposing, of course, that the pound of foundation would hold as much honey after being drawn out as would a pound of natural comb, and as it looked reasonable at first sight, I tested the matter by buying a few pounds.

As the honey season was very nearly over when the foundation came, I had to feed some extracted honey to get the sections containing the foundation sealed over, when I had as nice looking sections of honey as I ever saw built with natural comb. However, I was soon convinced that the claim of saving to the bees was erroneous, as upon cutting, or rather trying to cut, these sections of honey the knife would stop when it came to the foundation, and upon examination (which was done by a little scraping and washing) I found I had my original piece of foundation untouched, except as the bees had added their wax to it in building on the cells.

The next year more was used, and I procured some from another party, as by this time others had begun to make, but with the same results.

That fall I began to expostulate with one of the largest manufacturers, reasoning that after awhile our honey market would be spoiled if we persisted in using such thick stuff as a base to the comb in our surplus comb honey. Time passed on, but complaints began to come in about the heavy wax; or what was termed "fish-bone," in the center of some of the comb honey on the market, so I again expostulated to the manufacturer, but was met with the reply: "It is utterly incomprehensible the way you stick to your old notions on foundation; it has filled the markets with the most beautiful comb honey so far seen."

Soon after this the American Bee Journal lifted up its voice of warning, and bee-conventions resolved against its use for comb honey for the market to such an extent that some of the large honey-producers began to study on the matter of making a very thin foundation to overcome this difficulty. As a result, the Van Deusen flat-bottomed foundation appeared before the public, when we had foundation so thin that it took from 10 to 12 square feet to make a pound, while the old Hoge foundation gave less than 5 feet to the pound, and none of the other more than 6 feet. This seemed to be successful as far as fish-bone was concerned, but as the bees had to change the flat bottoms into a lozenge-shaped septum, it began to be whispered that this was not accepted as readily by the bees as foundation with a natural-shaped septum. However, this was far ahead of any brought before the public so far, and thus it could be readily seen that we were making progress.

Then the first made was of bleached wax, as we thought only *white* wax could be used, and this was much harder than that which was unbleached, so it appeared to a still worse advantage in eating the honey than the softer yellow wax of the present day would have done.

In 1880 still another advance was made, as a Mr. Vandervort succeeded in making a machine which would turn out foundation with the lozenge-shaped base, running as high as 12 square feet to the pound, which caused the North-eastern Bee-Keepers' Convention, in 1881, to give preference to that over the flat-bottomed.

Later on a Mr. Given, of Illinois, came forth with a press which gave thin foundation by a strong pressure of the wax when it was soft and pliable under the proper temperature, while all the previous makes had been swedged, as it were, by passing it through metal rollers having the foundation impress on them. This pressed foundation was claimed to be so much softer than the swedged, that the bees worked it enough more readily to pay for the foundation in the extra amount of honey stored in it; and also that they drew out and used all the wax in both septum and side walls.

Next came Mr. Foster, of Iowa, with his moulds, upon which melted wax was poured, when the moulds were shut up under pressure, and in this way foundation was cast in a similar way to that in which our fathers cast bullets for their rifles. This last was claimed to be the most soft and pliable of anything so far, so that the bees would take to it as "a duck takes to water."

Then came still other so-called improvements, such as making the base of the cells *very* thin while the side-walls were heavier, so that the bees were sure to economize the wax in these side-walls by making thin cell-walls, etc.; till when the nineties came on apace we had section foundation as near perfection as it seemed possible for comb honey, the base of some of it being actually thinner than that of natural comb.

Having thus wrought out the problem of perfect comb foundation for our section honey, the question which next came up was, will it pay to use it? To this nearly every bee-keeper in the United States gave an affirmative answer; but there were a few who had their doubts about it, even although the price had been reduced from $1.00 a pound down to a little more than one-half that. These few claimed that the difficulty about this financial part of the matter was, that at times the bees only add their wax on the rudimentary cell-walls of the foundation, not drawing the cell-walls out at all, for when honey was coming in rapidly there was an involuntary secretion of wax to an extent great enough to build all the needed combs, and therefore this wax was added to the cell-walls, or wasted by being dropped on the floor of the hive, or in building burr and brace combs, which were a nuisance to the apiarist when he wished to manipulate the hives from any cause; so that comb foundation was of no value for anything further than starters for the sections. However, as these downpours of honey cannot be calculated on very often, there is no one of the present day but who considers it as economy to use sections filled with this extra-thin foundation.

Borodino, N. Y.

Apiculture and Apiarian Pathology

BY RALPH BENTON.

As an industry based upon a knowledge of the structures and habits of an insect, Apiculture can be most profitably studied after one or more courses in Entomology have been pursued. While such courses are not prerequisite for work in general apiculture, they do become prerequisite for the advanced courses in apicultural practice. Students are therefore advised to pursue courses in Entomology either before entering upon or parallel with the earlier courses in Apiculture.

Courses 13 and 14 pursued by lower division students in the colleges of general culture count as prescribed work in natural sciences in those colleges. They are especially suitable as preparation for nature study work, and as such should be preceded or accompanied by Entomolgy I, Section II devoted mainly to a study of the honey-bee.

The growing demand for specialists

along all lines of agricultural science, and especially so along apicultural and pathological lines has led to increased facilities for students specializing along these lines. Properly qualified students will find abundant opportunity for special lines of research work both in Berkeley, Cal., and in the field, and also at some of the University sub-stations. This is especially true in connection with the Experimental Apiaries and School of Apiculture on the University Farm at Davis, Cal.

13. APIARY WORK. MR. BENTON.

A study of the community life of colonies of bees in the apiary involving the technique of handling bees, including the more common manipulations.

3 hrs., 1 unit, either half year. S, 9-12. Requisite: To be accompanied or preceded by course 14.

14. GENERAL APICULTURE. MR. BENTON.

An introductory course of lectures covering in outline the whole field of apiculture, with special emphasis on the natural history of the honey-bee.

2 hrs., either half year. M F, 9.

15. APICULTURAL PRACTICE. MR. RICHTER.

A practical course in apiary management designed to meet the needs of those students wishing to equip themselves as apiarists. The work includes hive-construction, technique of handling bees, wintering bees, winter and stimulative feeding, building up colonies for the harvest, bee-pasturage, varieties of bees, requeening, and operations attendant upon controlling increase and the production and handling of wax and honey.

5 hrs., throughout the year; 2 units each half year. Given at University Farm. Open second half year to students who have had course 13.

21. HONEY AND WAX PRODUCTION. MR. BENTON.

Lectures and apiary work, including spring manipulation, building up colonies, enlarging brood-nests, controlling increase, wax production, and comb and extracted honey production.

4 hrs., 2 units, second half year. F, 1-5. Prerequisite: Course 13, and Entomology 1.

23. QUEEN-REARING. MR. BENTON.

Lectures and apiary work. Practical experience in the modern methods of queen-rearing, the selection of stock, crossing, and the comparison of the several varieties of bees in the University apiary.

7 hrs., 3 units, second half year. W 11: Tu Th, 1-4. Prerequisite: Course 13 and Entomology 1.

25. BEE-DISEASES. MR. BENTON.

Laboratory work with lectures and conferences. A study of the symptoms, etiology, and treatment of the various diseases of bees.

7 hrs., 3 units, first half year. W 11; Tu Th, 1-4. Prerequisite: Course 21 and Hygiene 2.

30. SEMINAR IN APICULTURE. MR. BENTON.

Discussion of topics in bee-keeping of current interest, and some main theme throughout each term. In 1908-9 the themes for discussion were "Bee-Diseases" and "Governmental Help in Apiculture." For 1909-10 the themes are, "Bee-Pasturage and How Increase It; a Review of the Honey-Producing Flora," and "Bee-Keeping as a Field for Nature Study."

1 hr., either half year. M 4. Open to students enrolled in one or more advanced courses in Apiculture.

31. SPECIAL STUDIES. MR. BENTON.

There is abundant opportunity for qualified students to take up lines of special study either in Berkeley or elsewhere. Students choosing Apiculture as major subject are required to spend one or more seasons in the field or in the Experimental Apiaries on the University Farm. Arrangements have been made in some instances with several large apiaries where students may spend one or more seasons in the field or in the Experimental Apiaries on the University Farm. Arrangements have been made in some instances with several large apiaries where students may spend a summer. University credit will be given in field courses only upon the presentation of an acceptable thesis on some phase of apicultural science envolved in the work undertaken.

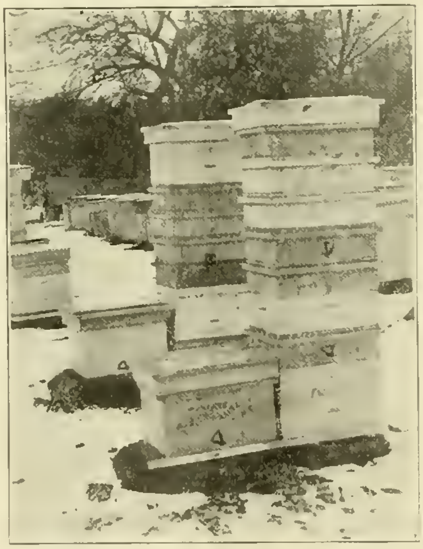
2 or more units at hours to be arranged. Open only to properly qualified students upon consultation with the instructor.

Protecting and Preserving Extracting Combs

BY F. GREINER.

After the extracting has been done at the close of the season we have our combs to look after. When the extracting lasts until away into September, the combs will usually keep after they have been cleaned up, till another year, without fumigating them, but combs cannot well be left to themselves much earlier; the larvæ of the wax-moth are apt to get in their destructive work.

Some have advised to leave the combs as they come from the extractor, wet with adhering honey. I cannot consider this good economy, particularly in a poor season like this. There is in the neighborhood of 3 pounds of honey in each set of my shallow frames, making a total of 200 to 300 pounds of honey in my stock of extracting supers. Many of my colonies are light, and need feeding up; these 200 or 300 pounds would save quite a little sugar, if available. We might set these combs out, all of them at once; the bees would clean them up very quickly. We do this sometimes. It works all right, although it is not safe for any one to "nose around" the bee-yard at this time. When allowing our bees to clean out extracting combs, of course, all colonies will get a share.


METHOD OF KEEPING COMBS.

How, then, can we manage to let certain few light colonies get the benefit of the honey obtainable? The picture herewith shows how I have accomplished it before now. The bottom-board upon which the extracting supers are stacked up back of the colony to be fed is so arranged that by sliding the hive back a little the bees can easily enter the to-be-cleaned up supers. All must be made bee-tight, and it is well to contract the entrance of the hive. The arrangements should be made at night when the bees have ceased flying, otherwise a case of robbing would ensue. By morning the bees have partly cleaned up and are on their guard. The combs may be thus left till it is time to take the bees into the cellar. The wax-moth does not trouble them.

To preserve our combs we have at times stacked them up on a long purposely-made box, so that I could fumigate the whole lot with one application. We still do this. (I will send a picture at another time, as I have no print ready at this time.) This has worked well and saved time, as I did not have to examine the combs after once being placed. All I had to do was to fumigate them from time to time.

Naples, N. Y.

No. 10--Bee-Keeping in Colorado

BY R. C. AIKIN.

We are nearing the close of the season. August and September practically end all summer work with the bees so far as getting stores and the bulk of all queen-matters are concerned; little can be done after Sept. 1st in this locality, and in almost every place surely by the 15th, in northern latitudes.

If, however, there are any colonies yet having plenty of bees not very old and plenty of stores, but having recently become queenless, or have queens that by all means ought to be superseded, it may be now done if done promptly. I think the most feasible way to provide for such things is to have nuclei provided *earlier* when queens were in great abundance, about swarming time, reared under the swarm impulse, and given to these little colonies to be fertilized and kept for such uses. The few bees to make such colonies cost but little. The young queens will now be getting quite a bit of brood; just unite these with the colony to be superseded or queenless by setting the other or full colony right on top of the nucleus. I would have the nuclei in regular brood-chambers.

Of course, in this uniting work the colony to be united should be made queenless, if not already so, but not until ready, or about ready, to unite. Take away the queen to be superseded, thoroughly stir up her colony until they are every last one as full of honey as they can be—and this can best be done by sprinkling them so completely with sweetened water that they will be so; then set them over the nucleus, with the least possible disturbance of the latter. This would best be done so late in the evening that they will not fly any more that day. Put some obstruction at the hive-entrance so that in the morning when they fly they are sure to note something wrong and mark the place. The nucleus should be left in its own place. Remember that the success of these direct unitings lies in the most thorough subduing and the filling of honey-sacs of those to be put with the other colony. Bees with sacs full neither fight nor will be fought.

In August a colony can be requeened by destroying the old one and giving brood so they may rear another, cutting out cells of the mother if undesirable stock. I do not recommend so late queen-rearing.

When it comes to the matter of stores, I am going to repeat a few principles given early in this series of articles; I feel they are worth repeating several times until bee-keepers get to know them. It is in regard to the arrangement of the brood-chambers for winter. Now, right as the honey season is closing is the time to make whatever adjustment of the brood-chambers are to be made to put them in proper shape for best wintering. And the very first thing is,

Big Hives are Best.

Suppose you have taken off a super—all the supers on the colony—and there is yet a little honey coming in, say you may anticipate needing storage-room for one-third to half a super full. It surely does not pay to put on a super of sections for that amount of honey only to have an unfinished lot of sections—do not think of such a thing. Some advise giving an extracting-chamber and get it that way—this is much better. I believe the best way is to put that extracting-chamber at the bottom; just lift the hive and set in this "extra," and put the hive right in plenty to take all the honey, and the back on. This will make storage-room in plenty to take all the honey, and the old combs now above being well stocked the late stores will be temporarily stored in these extra combs, and when the season is closing and the brood being curtailed they will move up much of this and put it as high as the room will permit. This will put that brood-nest in the very best possible shape for successful outdoor wintering. Another point is that so often these late stores are not of the best; this puts them in the best possible position to cause them to be the very first consumed, and so are out of the way by late fall or early winter.

There are still other reasons why such an arrangement of the brood-chamber is of value. Besides the fact that you have fewer unfinished sections this way, and your late honey well cared for, there is no danger of the colony being crowded out of proper breeding room late in the season when a lot of young bees for winter are wanted. With those extra combs *below*, the colony can fix their brood-nest more as they wish, more as they do in a state of nature when they are not hampered. The most natural way is the brood-nest deeper than wide, and if any empty comb be present it should be at the *bottom, always;* that is, in the winter. And when spring comes abundance of room is an encouragement to vigorous work, and the best building up of the colony.

Do not for a minute think that so much space will be any detriment to the colony, either through the winter or in the spring time; they can keep just as warm as though the hive were only half as deep. I do most surely recommend that such big brood-chambers are desirable throughout the entire year, except just when we want the chamber contracted for the purpose of getting the bees into the super. I am going to tell something more that will be strange teaching to some—it is this:

When you come to a colony with a super say two-thirds worked, just as the flow is about to an end, and I would tell you to lift that brood-chamber and put a set of empty combs underneath, I would expect to hear you say that would spoil the super above, they would not complete it. But remember that it is a common principle or rule that the colony *always* wants to put the stores *above* the brood. If they cannot get it above they put it as nearly so as they can, and stick to that rule.

So, then, when the season is about closing, the last round of supers are on, and to put more on would in all probability cause you to have a lot of unfinished or even simply stained supers, just give an extra set of combs below, leaving the super in its place above the brood-nest proper, and the honey will go to its proper place. Then if there should be more than the super will hold, the colony is in no way injured, but benefited, and your work has been simplified at the same time. If you do not have the sets of extra combs, give a chamber with one or two combs in the center, and the balance starters or foundation (though I do not recommend foundation, for several reasons), or even parts of combs. Should you give the starters, and the bees should build comb in them, it would be largely drone-comb, if the queen above is an old one, and there be little or no drone in the hive; but there will be very little brood put in this when the flow is over, if the time be in August and September. You cannot do this in mid-season, for the comb built then would be nearly all drone, until they had a good supply of it, and it would be filled with brood. But they will build this drone-comb only for store purposes when the season is winding up, and use it mainly for that purpose; then the apiarist has from that to well into the spring to cut it out at his leisure. Any honey stored in these combs and left there beneath during the winter will be consumed, so that in the first examinations in the spring it is empty and easily removed to be turned into wax.

Do you object on the ground of the extra cost of those extra brood-chambers? You do not need to; the first cost of all these needed is not by any means a large sum, and the saving in time, the better wintering, the stronger colonies obtained by their use, the fewer sections spoiled, and all the advantages and uses of them, make it one of the best and safest investments in the stock of fixtures. One full crop season will gain you enough to pay every cent of the first cost of these bodies, leaving you with that much more invoice value, and the next and following years you have them without cost. Also referring back in this series of articles, you will find you have need of these in the matter of swarm control. As I see things now, I am first, last, and all the time, in favor of large brood-chambers; but contractible at the option of the apiarist.

Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

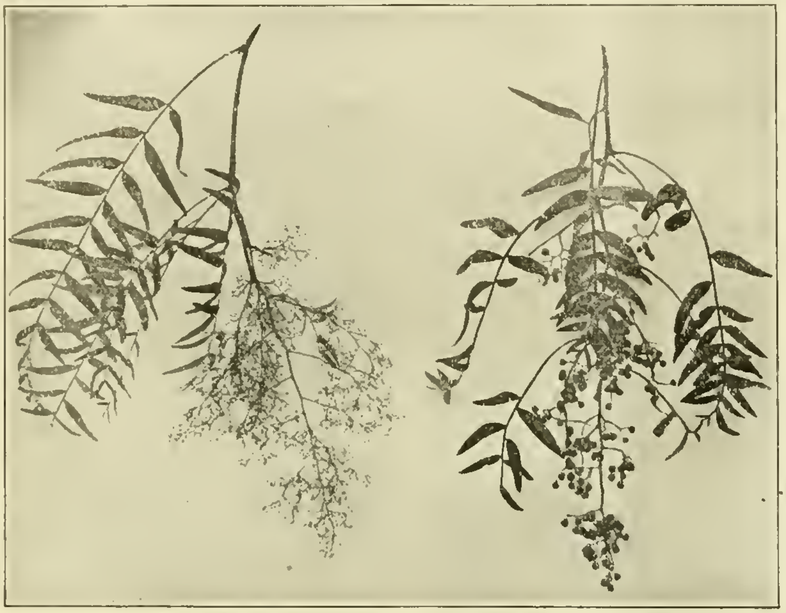
Honey Quotations

The honey quotations given in the papers are seldom reliable, especially those given in the dailies; then, at times, the prices given even in the bee-papers are incorrect. All of this arises from several causes, the main one being that the market men who supply the newsgatherers with this data are always on the alert to shade prices in their favor. It is well never to sell at such published prices; only use those figures as a sort of guide. Better write several reliable dealers that you have such and such honey, sending a sample thereof, for sale, and find out what you can get for it. You might mention that you have written to other dealers, and you will sell to the one offering you the best inducements. Never hold your honey too long, unless you are positive you will do better by so doing.

Honey has taken quite a tumble here; comb honey retailing at the stores for 10 cents per small section—just one-half of what it was a year ago. It cannot be on account of any increased production, for it commenced to fall long before it was known what this year's yield would be. Then, this year's crop is not above the average, as near as I can learn. In some places it may be set down as a failure, I believe. The cause, mainly, for the slump is that the financial conditions compel consumers to retrench; the apiarist is one of the first to "get it in the neck," to use a slang phrase that suits financial depression. The bee-keepers will rejoice with the return of prosperity, or what is better, the resumption of normal conditions. What is hurting this country is the set of men who rule the money and trade markets, and grind out the people's sustenance as they see fit. But I must draw the line at purely economical subjects.

The California Pepper-Tree

Next to the eucalyptus and the acacias no tree has been more widely planted in California for ornamental purposes than has *Schinus molle*, or the Peruvian mastic-tree, or, as it is now more commonly known, the California "pepper-tree." It received the latter name in the Golden State, where it was introduced by early argonauts from Chili, because its fruit, or seed vessels, resembled pepper-berries. The finest specimens of these trees are found in warm places, though the finest single tree I ever saw was at Martinez, on Suisun Bay, some 30 miles northeast of Oakland. In and about the latter city there are some fine trees.



Flowers. PEPPER-TREE. Seed-Berries.

San Jose, nearly 50 miles south of here, is filled with beautiful specimens of pepper-trees—they are grown on lawn, in garden, and upon the sidewalk. For the latter place they are hardly suitable, as it is hard to get them out of the habit of producing low growing and very crooked branches. From a distance the tree is easily mistaken for a weeping-willow, as the young branches and long leaves are of a drooping nature. The tree has never been planted for commercial use, not even for fuel, though it makes a fair fire-wood. I never heard of it being used in the arts. The wood contains much gum, and it is possible that some use might be found for the gum that could be obtained from the leaves and timber.

I understand that owing to the trees in the southern portion of the State being infested with scale insects injurious to orange and fruit trees, this tree has fallen into disfavor—that it has been turned over to the executioner, and whole cities full of them have been cut down. This may be only an exaggeration. In this portion of the State I have not found it infested with any obnoxious insect.

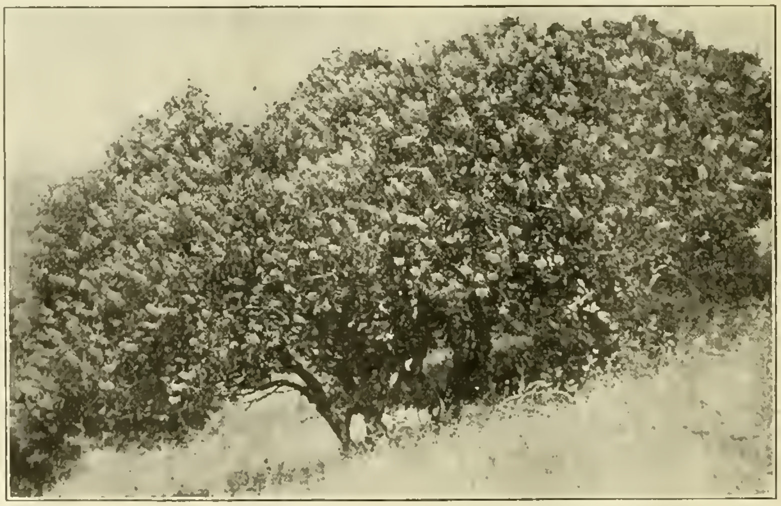
To the apiarist the pepper-tree is of inestimable value. While it begins to bloom in some places, and some years, as early as April, still its real season of infloresence is not until August and September, and even as late as October. At this season there is usually a dearth of other flowers, so the pepper-tree is a boon to the bees. That it is rich in nectar there seems to be no doubt, but as the bees use all that is gathered for bee-provender, I have never been able to find any stored as surplus, though I have heard of quantities so collected in the southern counties. This honey is said to be rather "peppery" in flavor. And so it is well the trees bloom in the fall when the bees have finished storing in the supers.

The flowers of this tree are very small, and of a sickly green or yellowish color. The "pepper-berries" are beautiful in appearance when they assume a purplish red color when ripening in November and December. In the photograph I have endeavored to show the flowers, fruit and a leaf.

Another variety yet rather common in these parts is *S. terebinthifolius*, or Brazilian pepper-tree. It is said to be a finer growing tree than our much-liked *S. molle*.

The Buckeye as a Nectar-Yielder

Here is a tree that needs no botanical name to give it a suitable introduction, and the good people who hail from Ohio cannot lay full claim to it, because, I believe, it is about as common in other States of the Union as it ever was in the "Buckeye State." Of the tree and its flower I shall not attempt to write anything, for I suppose every body is acquainted with it. But for the benefit of the several bee-editors who claim the aforesaid "Buckeye State" as their birthplace, I am thoughtfully (sic) presenting a picture of the tree as it is found growing during summer upon our hillsides. It is a nectar-yielding flower, though sometimes, I believe, the honey is considerably "off flavor," yet not sufficiently so to make it unmarketable.



BUCKEYE AS A HONEY-PRODUCER.

A Fraud on the Honey-Bee

A friend in the East who knows that I am somewhat interested in bees and honey, sent me a clipping from Leslie's Weekly. I find that the article my attention was directed to is a letter from a correspondent who professes to live in a town in far-off Texas, and attempts to call the editor's attention in what he tries to make out to be a very learned discourse on how the bee can make bad honey.

This writer might befuddle the unwary and make them believe that bees should be banished from the land by boards of health, but to the wise this "learned" writer appears to be a consummate knave, to put it in the way he deserves to be handled; the cloak of his master, the corn-syrup trust, does not disguise the ass's ears. No where does the "assinassity" of this long-eared biped appear more glaringly than when he calls the worker-bee out of her gender. Of course, the corn-syrup trust is hard pushed to get its vile stuff foisted on the public, and it does not hesitate to stoop to nefarious ways in doing so.

The "he" bee is a terrible fellow to the paid writers of the sulphuric-corn-glucose-muss of the nefarious trust, for, forsooth, the "he" bee makes honey that is vile, nasty, filthy and unfit for human consumption. I never saw any "he" bee honey, but I wager as much genuine hair as John D. Rockefeller has on his "skating rink," that the *he* makers of the corn-syrup trust turn out a more damnable stuff than all the bees in the world could manufacture, if it were possible for the industrious insects to make bad honey. Let John D. and his ad-men know that "he" bees don't monkey with honey as he does with so-called food stuffs; let the conglomeration bunch know that "she" bees produce honey, and they do it to the people's taste.

I don't understand for the life of me how a paper that claims such respectability as Leslie's does, can prostitute itself as to allow its editorial columns become the medium of such advertising stuff as the letter I referred to above. It is so patent that it was prepared by the corn-syrup concern that one would think it would be run in the advertising columns rather than editorially. But, I suppose, it is one of those cases where the editorial pages are subservient to the business office, as is nearly always the iron-clad rule of the dailies. Such work is injuring the standing of our American publications; they will stoop to damn an honest business because some millionaire advertiser will pay a good price to get his stuff into their columns. 'Tis a damnable business that will stoop to such nefarious methods, and bee-keepers should shun the said papers as they must surely do corn-syrup.

One of those strange coincidents that sometimes manifest themselves appears right after the aforesaid "he"-bee honey letter. It is an editorial entitled "Advertisers Fleeced by Fakers." It tells how a man was justly punished in New York by fine and imprisonment for practicing fraud on advertisers. I should remark that the publishers of Leslie's Weekly (perhaps "Weakly" should be the better name, since the paper shows weakness when it stoops to taking doubtful advertisements) should be prosecuted for fraud on subscribers. It is as bad to practice fraud on a subscriber as it is to humbug an advertiser, according to my manner of thinking. Let the Leslie folk go to jail and pay the fine to the treasury of the National Bee-Keepers' Association.

Our
Bee-Keeping
Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Honey Fourth as a Food

In the health department of World's Work is given a list of foods in the order of their excellence for general purposes, there being 24 named in the list. Here are the first four items on the list:

1. Fruits.
2. Nuts.
3. Grains (including bread).
4. Honey.

Wonder how many of the sisters give honey so high a place on the bill of fare.

Uncapping Honey

The Federal Independent Bee-Keeper (Australia) has a Ladies' Column, in which Ethel Penglase gives her method of uncapping, which, she thinks, has never been given in print. She says:

> On top of the uncapping can I use a flat board slightly larger than the Langstroth frame. This board is held firm and in the right place by means of cleats which fit tightly inside the top edge of the uncapping can. On this board I place my comb of honey flat down on its side. The comb is held from slipping along by two small nails driven into the board. Then with a Bingham honey knife, which I keep in hot water, I slice the cappings off the comb, which is held so firm that it is no trouble to take off all the cappings in one slice. But although this can be done I do not recommend it, as the cappings are inclined to fall back on the comb and make a sticky mess, so on this account I make three bites of the cherry, each time scraping the knife under the edge of the board. I would like to have the opinions of other bee-keepers on this system. I reckon it beats the Yankees.

Honey-Soap

Cut 2 pounds of yellow soap in thin slices and put into a saucepan with sufficient water to prevent the soap from being burnt. Place on the fire, and as soon as all the soap has dissolved add one pound of honey and stir until the whole begins to boil. Then remove from the fire, add a few drops of essence of cinnamon, pour out into a deep dish to cool, and then cut into squares. It improves by keeping.

Honey-Lemonade

W. H. Boehm, a prominent German apicultural writer, says that for years he has had daily a drink of honey-lemonade, and he would consider it a real hardship to be deprived of it. To a quart of cold water is added 3 or 4 tablespoonfuls of extracted honey (more or less honey according to taste), and when this is thoroughly stirred the drink is ready. Palatable and wholesome, the honey being no doubt more wholesome than the sugar generally used in lemonade.

Good for the little folks, sisters.

Peasant's Honey-Tart

Roll out a piece of bread-dough into a circle about 4 inches in diameter and nearly half an inch thick. Over half of it spread a tablespoonful of honey and a teaspoonful of butter. Add some almonds or other nuts blanched and broken into little pieces. Fold over the other half, pinch together the edges, and thus you will have a tart in the shape of a half-moon. Bake in a moderate oven.—*L'Abeille de l'Aisne.*

We tried this honey-tart at our house, but it was not such a very great success. The trouble is to get the dough rolled out thin enough. Probably another trial will prove more successful. There is, however, something very pleasant in the taste of the honey after it is thus baked, that some will prefer to the taste of the uncooked honey.

Getting Rid of Ants

We have 7 colonies, and I like the work. We have taken 58 pounds of honey from one hive, and the season is not over.

Is there any way to get rid of small black ants?

Honey is worth 15 cents a pound here.

We have had the American Bee Journal for the last year, and have learned a good deal from it. MRS. L. C. FITCH.

Pike, N. Y., Aug. 17.

If you can trace the ants to their nest, pour gasoline into the nest. You may also poison them. Put some kind of poison mixed with honey between two little boards with a space of an eighth of an inch or less between them, but none of the poison within half an inch of the edge. That will allow the ants to get the poison while the bees cannot reach it.

Honey Versus Cane-Sugar

A child's craving for sweets of some kind shows a real need of the system in that direction; but, unfortunately, the sweets at hand and usually given to supply this need are not wholesome, and serve no better purpose than to please the child's taste. In fact, the work of changing the cane sugar into grape sugar so that it may be assimilated is often too great a tax upon the child's stomach, and sickness results. This, however, is not the case with honey. The bees have fully prepared it for immediate assimilation, and it is ready to be taken into the system without taxing stomach or kidneys. Doctors frequently order honey for those whose digestive organs are too weak to convert cane sugar into grape sugar properly. The wholesomeness of honey, however, is not disputed by those who know anything about the product of the hive. The principal difficulty in the way of its substitution for the sweets usually craved by children is the apparent limitation of its use. The child has an inordinate longing for cakes and candy, and that is not always satisfied by bread and honey; therefore, to take the place of cane sugar, honey must be prepared in the same manner as cane sugar. It must be made into cakes and candies and other dainties dear to the children. The object of this article is to supply housekeepers who desire to substitute honey for cane sugar, in the diet of their children, with a few simple recipes obtained from practical experience, for making this wholesome sweet into a variety of pleasing confections.

A few suggestions on the care of honey may be of benefit to those who are so situated that it is cheaper to buy in quantities. The worst place to store honey, or even to keep it for a short time, is in the cellar or any damp cool place. Honey, when extracted from the comb, readily absorbs moisture, becoming thin, and (in time) sour. The very best place to store honey is in the attic, up next to the roof, where it is hot. During cold weather, honey that is kept any length of time has a tendency to granulate, turning to a white, semi-solid granular condition. This is called "candied honey," and it frequently "candies" so solid that it must be dug out of the bucket with a knife. It is a simple matter, however, to restore it to its former condition. Place it in hot water, never over 160 degrees, and let it stay until it has liquefied. It may take an hour, or it may take a whole day.

In the following recipes quantities are given in pints and pounds because the success of honey recipes depends upon the right proportion of the ingredients. All cups are not the same size, and do not hold the same quantity of material, therefore it is best to use a standard measure.

The simplest honey cake is the honey ginger-snap.

One pint of honey; ¾ pound of butter; 2 teaspoonfuls ginger.

Boil together for a few minutes, and allow it to get nearly cool. Add enough flour to make a stiff dough, and roll out thin; cut into round cakes and bake quickly.

Another simple cake is the honey cookey. The recipe is given for a large quantity, because they will keep indefinitely, and they are nice to have in the house all the time for the children to eat between meals. If they are wanted in smaller quantities the recipe can be reduced a half or even one quarter.

One pint honey; 1 quart sour milk; 1 teaspoonful soda.

Mix well together and add sufficient flour to make a soft dough. Roll moderately thin and cut into round cakes. Bake in a slow oven to prevent burning.

A richer cookey is made by the addition of butter and eggs. One pint of honey; ½ pound butter; 4 eggs; ½ pint buttermilk or clabbered cream; 1 quart flour; 1 teaspoonful soda.

Mix the honey and the butter and the eggs well and add the buttermilk. Sift in the flour and soda and mix well. Mix in enough flour in addition to the quart to make a cookey dough that will roll out well without sticking; cut in round cakes and bake in a slow oven.

In the line of confections, some sugar must be used to make the honey "candy;" but the home-made honey caramel has the advantage of being pure.

One pint honey; 1 pound sugar; scant gill of cream.

Boil until it makes a soft ball when dropped into water. Stir in a teaspoonful of vanilla, and pour it into a shallow buttered pan to the depth of about half an inch. When cool enough to prevent its sticking to the knife, cut into inch squares. If chocolate caramels are desired, use a tablespoonful of melted chocolate instead of vanilla, stirring it in just before pouring into the buttered pan.

To make honey popcorn balls, boil a pint of honey in an iron frying-pan until it is quite thick, and then stir in the popped corn. When cool, mold into balls.

As a substitute for tea or coffee for children there is nothing better than honey tea—a very simple tea made by adding a tablespoonful of honey to a cup of hot water. If not sweet enough to suit the taste of the child, add more honey. Mrs. B. R. Winslow.

Washington, D. C.

The foregoing article is copied from Gleanings in Bee Culture, whose editor thinks so well of it he suggests that bee-keepers have it copied in their local papers. He says:

"It is brief and to the point; and almost any editor would be glad to publish it if a polite suggestion is given from a resident bee-keeper to that effect."

Doctor Miller's Question-Box

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Wintering a Strong Colony

Will bees winter well in 8-frame hives, one on top of the other, making 16 frames in all, and an empty comb-honey super on top of all, filled with burlap? New York.

Answer.—That's a good arrangement for a strong colony.

Late Feeding for Winter

Will it be best to feed late in the fall, and keep it up all winter?
North Carolina.

Answer.—No; better feed up early enough to last till bloom comes again next spring.

Painting Bottom-Boards Inside

Should bottom-boards of hives be painted inside? California.

Answer.—It is not necessary, although of course a bottom-board will last longer if the under side be painted, especially where quite near the ground. But there is no gain in painting the inside.

Combs of Honey for Spring Feeding

I have about 30 brood-frames full of honey. Would it be wisdom for me to keep them until spring to feed or extract them now and feed syrup if needed in the spring? If I keep them over how can I do it to best advantage? Iowa.

Answer.—I should certainly keep all I thought I could use in spring and up to the time of harvest. A dry room where they will not freeze much is the best place for them. If you haven't that, put them in the cellar. Look out for wax-worms, and if they trouble, fumigate the combs with carbon bisulphide.

Two Queens in One Hive

Something a little strange to me has happened in my apiary, and I cannot understand it. On July 19, I opened the hive of my best colony of Italian bees and took 2 frames of bees and brood, leaving the queen in the hive. The frames of brood and bees I put into a 3-frame nucleus. One side of it is glass with a door that shuts over it, so that I can see what the bees and queen are doing at any time.

August 3, I went back to the same hive, and after a long search I succeeded in finding the yellow queen, a year-old one that I reared myself. Now after I looked the 2 frames over and removed 2 small queen-cells that the bees had started, I introduced the queen with a cage, and she was accepted. August 6, I put in a frame with starters as directed in "Forty Years Among the Bees." It was several days before she deposited eggs in it, but she proved all right, only a little slow. But you know this is a slow year for bees.

But the strange part of it is this: While looking through the glass today, I thought the queen looked smaller and a shade darker than a few days before. But while I sat watching, behold the large yellow queen that I had introduced came in sight also, and I had the satisfaction of watching both queens at once on the same side of the comb. Now I have always read and been told that 2 queens could not live in the same colony unless the old one was going to be superseded. But in this case the queen I put in is not old. And, besides, it is not a colony—only a small nucleus. I am going to watch them with a good deal of interest to see the result.

How did the second queen get there?
Illinois.

Answer.—This is a very unusual case. Just once in all my experience have I had 2 queens in the same colony, with neither queen more than a year old. One can only guess as to how the second queen got into the nucleus. It's a fairly safe guess to say that she was reared there. It was 15 days from the time the nucleus was formed till you introduced the queen, during which time a virgin queen might easily have been reared. But the strange part is that this virgin should suffer the introduction of the older queen.

Bees Stopping Storing—Wired Combs—Entrance-Blocks

1. I thank you very much for the way in which you answered the questions in the September number. Will you give a little more information on question 2, page 308, regarding bees stopping storing? These bees did not stop till they swarmed, when they seemed to get weaker every day, so I looked in and found moths on the comb and not a bit of honey. Did the queen die before the moth got in?

2. I had one of my colonies destroyed by comb falling down. Will wiring keep it from breaking? or would you wire horizontally or diagonally?

3. I use the Acme hive and Wisconsin style. Which is best, in your judgment?

4. Are those entrance-blocks used on the hive all year around? or when would you advise me to put them on, and what opening?
Iowa.

Answers.—1. The further information that the colony had swarmed makes the answer easier. The swarm took away a large part of the force, of course leaving it weaker, and as the old bees were dying off all the while and no bees from the new queen could hatch out for something like a month, it would become weaker still. More than that, probably the young queen was lost, and then the colony became so weak and discouraged that the moths took possession, especially if they were black bees.

2. Yes, wiring will help; horizontal wiring being more used than diagonal. Foundation splints have the advantage over both that they prevent the upper part of the foundation from stretching. With wiring there is generally a space at the upper part where the cells are so stretched that the queen does not lay in them. With foundation splints she lays clear up to the top-bar during the height of breeding.

3. I like the Wisconsin the better of the two because it has the regular Langstroth frame. The dovetailed is still better, because the portico of the Wisconsin makes a good shelter for spiders.

4. The entrance blocks should be taken away entirely during hot weather, or while in the cellar. For outdoor wintering they should be used to make a small entrance. Then in spring enlarge them only as the entrance becomes crowded.

Space Between End-Bars and Hive

Would there be trouble with frames made short enough so that there would be a ½-inch bee-space between the end-bars and the inside of the hive? I have trouble with the standard frame on account of smashing bees. Would the bees fill the space between the end-bars and hive-ends with comb? I use the staple-spaced frame. New York.

Answer.—You would be badly troubled with combs built in such a large space; at least in some cases. Possibly you might like W. L. Coggshall's plan: Drive staples into end-bars at the lower-end, so the end-bars cannot crowd against the end-wall of hive.

Handling Comb Honey

1. What do you do with your honey-sections for safe keeping when taken from the hive full of honey?

2. I believe you take them off a few at a time. Is that so?

3. Is there much danger of moth in it?

4. Do you get shipping-cases returned? Illinois.

Answers.—1. The supers are piled up in the honey-room crosswise, or with blocks between them to allow air, until time to scrape and put in shipping-cases.

2. Not so very few; generally from 240 to 2400 at a time.

3. No, but years ago, when I had black bees the worms troubled. The eggs are laid while the sections are on the hive.

4. No.

Probably Bee-Paralysis

I have 2 or 3 colonies of bees that are affected with some disease which I don't understand. What is the trouble with them? The bees affected are small and dark, and the bees try to drag them out of the hive and pick and pull at them all the time. Is it contagious? What can be done to eradicate it? The bees affected don't store much honey. Missouri.

Answer.—It is probably bee-paralysis, and is hardly considered contagious. The diseased bees will be seen to be trembling. Many cures have been given, but they do not prove efficacious, unless it be the one given by O. O. Poppleton—sprinkling with sulphur. In the North the malady is of little consequence, disappearing of itself; but in the South it is a very serious matter, resulting in the loss of the colony.

Wood Splints in Foundation

1. I have tried your splints for foundation. I took wood-separators and with a sharp knife cut them into splints, as I thought they should be first-class, and I think it would be the finest thing for preventing bulging. I also use 4 horizontal wires. I put a full set of them, 10 frames in a hive, but the bees cut the foundation to pieces to get them out. I use the clipped-queen plan and hive the swarms on the old stands. I had a full super on top, so I took the brood-nest away, and placed that hive in its place, the same as usual. What do you think was the reason that they cut the splints out? They were all covered with wax, or rather "tried" in wax. I have tried only one whole hive, but now have 10 of them fixed that way—100 frames. I should like to know what was wrong, for I was pretty sure it will prevent sagging. I use full-depth frames and extract all together. Could the wax that the splints were in have been burned and thus spoiled?

2. Do you buy or make the splints? Washington.

Answers.—1. I have had quite a little of the same trouble. It comes from giving the bees the splinted foundation at a time when no honey is yielding. When bees have nothing to do they are likely to gnaw foundation, and all the worse if splinted. Don't let them have foundation when they are not gathering, unless you feed. Possibly there was some other trouble with you.

2. I buy the splints.

Italianizing Bees

I have some weak colonies of hybrid or black bees. If I would put an Italian queen with them, would they get stronger and do better? And when is the best time to change them? Indiana.

Answer.—Giving an Italian queen would probably make little or no difference in the strength of the colony this fall. But it might make a big difference in the colony for next year, providing the present queen is poor. In September is a good time to put in a new queen, or even in October. Then the colony will have a chance to start out all right next spring.

Stores for Winter—Supers in Winter—Wintering Bees

1. Will bees in a dovetailed hive when running for section honey, be sure to keep enough for themselves, or is it best to look through them? An old bee-man says they will take care of themselves, and that I need not bother about them.

2. When should I take off the supers for winter?

3. If I put 2 strong colonies together, will they winter as well? or would I better wait till spring and then unite them?

4. Will they winter on the summer stands if wrapped in heavy paper?

5. Which is the better, to leave one-inch opening or about ½-inch for winter? Pennsylvania.

Answers.—1. They will generally look out for themselves, especially in a 10-frame hive, but sometimes an 8-frame may need watching.

2. Don't take them off for winter, but for fall, as soon as they stop storing.

3. You may as well not unite *strong* colonies till spring.

4. Yes, although they might possibly do better in a good cellar.

5. For outdoors an entrance ½ inch deep, or perhaps ⅜ is better, as mice cannot get in so easily. In the cellar the larger the entrance the better.

Supers—Covers—Feeder—Separators—T-Super

1 What is the best way to add empty supers to a colony that has the first super about half full when honey is coming in freely?

2. In giving empty supers when the honey-flow is beginning to fall short, do you put them next to the brood-chamber, or on top or a partly filled super?

3. I have a lot of telescope covers 11 inches deep. Will it be all right to put them on in winter, or will they keep the bees too warm?

4. Would this cover I speak of in question 3, if put on hives in summer, keep them cooler, or would they be too hot for summer?

5. In this locality it looks as if there is not going to be any fall bloom. If it fails, should I feed to stimulate brood-rearing? If so, when should I begin, and how long should I feed them?

6. If there is plenty of honey, at about what time do bees quit rearing brood?

7. If bees are getting plenty of pollen and no honey, will they go to rearing brood the same as if they were getting honey, too.

8. What is the best feeder to use to stimulate brood-rearing?

9. My bee-hives are all facing the north, but the wind cannot strike them hard. Is this any disadvantage to them?

10. In putting supers on a newly-hived swarm that is now on the stand where an old colony was, should I put a queen-excluding honey-board over the brood-chamber for a few days to keep the queen from laying in the partly filled supers that were taken from the old colony?

11. Do you use full sheets of foundation in brood-frames?

12. Do you use separators in your supers?

13. Will the T-super that you use fit the standard 8-frame hive?

14. Please give directions for making the T-super that you use. Kentucky.

Answers.—1. Put the super under so long as there is a fair prospect of its being filled. In a good flow it may be well to put on top also.

2. On top.

3. No danger of keeping too warm on top.

4. They would hardly do any harm.

5. Even with what you would call no fall flow, there is generally enough to keep up brood-rearing. If not, the sooner you feed the better, so as to keep up brood-rearing, through September.

6. Somewhere about Oct. 1, some earlier and some later, depending upon age of queen and condition of colony.

7. No; but if plenty of honey is in the hive the pollen will stimulate to brood-rearing, especially in spring.

8. I don't know. Perhaps the kind of feeder makes no difference.

9. Probably not.

10. Yes, or else don't put on the supers for 3 days.

11. Yes.

12. Yes.

13. It is shorter, allowing ventilation, or a strip to close it. I use it on the standard 8-frame hive.

14. A plain box without top or bottom. Mine were made, inside measure, 17⅜x12⅛ (the width of the hive) x4⅝. Seasoning has made some of them shallower. If it were to do over again, I would make them 17¼ long.

A Beginner's Experience and Questions

I am a beginner in the bee-business. I purchased 3 colonies of bees last spring with all attachments. I have had 4 swarms, 2 each from 2 of the colonies. The other did not swarm at all. All were strong colonies, especially the one that did not swarm, which one had its supers crowded with bees. I had one swarm in May; the other 3 in June. It was necessary, on account of my inexperience, to hive the first swarm without even starters in the brood-frames. The others were started with one-inch strips. They all seem to have done well considering the year. The first two have some honey stored in their supers. But to return to the old colonies.

One has stored but 8 pounds of honey all season. Another has, I should judge, stored in its super about 25 pounds. Now to come to the one which did not swarm, and first experience. As I said before, they had not swarmed, and about the last week in August I decided to take the honey off. I had never endeavored to handle the bees farther than opening the top of the hive and looking in. I opened the hive, and seeing how quiet and docile they were, I endeavored to loosen a section-box. The bees resented this, and although I had on a veil, I desisted and went away. I came back again, and thinking to loosen the supers I rapped them sharply with the hammer. Never again! The bees went wild and buzzed around my head so that I could not hear a sound 2 feet from me. Not content with trying to "fix" me, they stung everything and everybody in the neighborhood. I had to run a half a mile away before the bees left me. I was mad, being stung about a dozen times, for they had, in spite of me, gotten under my veil. I was not ready to give up. I vowed to get the better of them if it took me a hundred years. I suddenly thought of smoke. I started the homemade smoker and again went at them. I smoked them at the entrance, in the supers, and everywhere I could think of. I then gained the upper hand. I pried off the supers and smoked the bees until they left them, and then took out the honey. Alas! It was not yet ready to come off. I could remove only 14 pounds. The rest was partly uncapped. I returned it to the hive. I have left them alone for 2 weeks, and now, upon looking in, I find every drop of honey left (which was nigh 16 pounds) gone, and the combs hanging there with the bees on them.

1. What is the reason for this?

2. The bees are very lively, but only about half as many as there were before. Did I kill them with too much smoke? Are they dead inside the hive, none being dead outside?

3. I have never tried to open a brood-chamber. How can it be done? If you smoke the bees, which you must to pry the frames

loose, they are sulky and sting every one who comes near. How can this be remedied?

4. What do you think of this? The colony which stored 8 pounds of honey thus far hangs out a great deal. Several days ago they hung out all day while it rained, and a great number were drowned. What is the cause of this?

5. When can I tell the time to take off honey? It looks capped over at the top, and yet it is uncapped at the bottom. This made me make the mistake I did with the colony that did not swarm.

6. What do you think of my work so far? I think it is poor, but I do *not* intend to give up. New Jersey.

Answers.—1. There was nothing unusual. During that 2 weeks no honey was coming in, and the bees carried down into the brood-chamber the honey that was in the super.

2. It is not likely that you killed any bees, and certainly there are none dead in the hive, for the bees would promptly carry them out. Possibly there is not the difference you suppose in the number of bees. Possibly the queen has not been laying much lately, and the old bees dying off has left the number less. Possibly the colony has swarmed without your knowledge and the swarm has gone off.

3. Do just about the opposite of what you did. Give a little smoke at the entrance *before* you do anything else. Then when you pry up the cover, blow a little smoke into the crack as you raise the cover, and the same when you raise a super, blowing smoke under the super and then over the tops of the frames. At any time when the bees become belligerent, give a little more smoke, but don't deluge them with smoke. Your hammering on the hive when they were not yet subdued infuriated them.

4. Nothing wrong. Little or nothing to be done in the field, the bees stay at home and the colony being strong it is more comfortable outside than in. You are probably mistaken about the bees being drowned by the rain. Next time watch closely and you will find that the wet bees dry off all right.

5. You must examine the bottom as well as the top.

6. I think you did very well for one who probably had nothing but his own experience to go by. What you need is to learn from the experience of others. You can get the experience of thousands packed together in a bee-book, and it will be worth to you ten times its cost. Don't think of getting along without a bee-book.

A Beginner's Questions

1. Mine being the only Italian bees in the country, how may I have my queens purely mated?

2. Are drone-eggs always laid by a virgin, or can a queen lay drone or worker eggs at will?

3. Will bees store syrup for winter? Is syrup good for them?

4. Are the so-called Red Clover Italians better than other strains?

5. How about a separate entrance to supers? Missouri.

Answers.—1. By allowing no drones in your black colonies. Cut out drone-comb and replace with worker, shave heads of sealed drone-brood and trap all mature drones with drone-traps at entrance of black colonies.

2. Very few drone-eggs are laid by any other than normal, fertilized queens, which lay drone-eggs in drone-cells, either at their own will or at the will of the workers.

3. Yes. It is good for them to winter on, and for brood-rearing in spring.

4. They are better if they work on red clover better than others.

5. Some advise it, but generally it is not advised. An opening above for ventilation, however, may be a fine thing.

Preventing Swarming

What shall I do with bees that don't do anything but swarm all summer? I have no trouble with afterswarms, but after the first swarm is hived about 10 days I find the hive and supers all full of eggs and larvæ, when they will start to swarm and keep it up all summer.

June 1st I put on supers—2 on each hive, one with sections and one with extracting-frames. But they wouldn't work in them to amount to anything. So I don't think there was lack of room. I have some of the very best Italian queens that I could get last spring, but they are just as bad as my common bees. Could anything be done to prevent the swarming fever?

I am planning on having some hives made that hold 12 Hoffman frames. Would that be as good as a 1½-story hive?

I had 6 colonies in the spring, but would have at least 25 now if I would have saved all the swarms. I got 12 gallons of extracted honey and 100 sections—all clover honey. Last year I got that amount of honey from 2 colonies. Minnesota.

Answer.—Your case is rather unusual. It would seem as if the strain of bees might have something to do with it, only you say that the colonies with newly acquired queens are as bad as the old ones. The season may have something to do with it. Larger hives will no doubt help. Then if you run for extracted honey and have plenty of ventilation, no swarm ought to swarm that same season. Besides having a large entrance for ventilation, move backward or forward each upper story, so there will be a space of ¼ inch for air between each 2 stories.

Cyprian Bees—Queen-Rearing

1. What was your experience with the Cyprians, from a comb-honey producer's standpoint?

2. I see you use the Alley method of queen-rearing. Could you in this way rear queens enough to requeen an apiary of 100 colonies before the swarming season, using only one queen as a breeder, and how would you do it?

3. I have been using a queen-rearing outfit the last 3 years, but cannot get more than 15 or 20 percent of the cells accepted. I would like to know how to get more accepted.
N. P. A.

Answers.—1. I hadn't experience enough to judge, but I think they are much like Italians.

2. I haven't used the Alley method for years. I wouldn't think of requeening an apiary so early by any method. Such early queens are too poor.

3. I have no trouble whatever about getting queen-cells accepted, and you needn't have. I go back to the simple plan of letting the bees start their own cells, and with these they are always satisfied. You will no doubt be interested to read about 20 pages on the subject in "Forty Years Among the Bees," beginning at page 228, giving very full particulars. I've tried perhaps all the different plans, and I think by this very simple plan I get as good queens as can be reared.

Preventing Swarming—Putting On Supers

1. As I do not like the idea of cutting out queen-cells during swarming time, and I also want to keep my force of bees together, not desiring any increase, how would it work by giving strict attention, to have a queen-trap for about every 5 colonies and a bee-entrance-guard for every colony, thus preventing the queen from escaping? I tried a queen-trap on 2 hives this year for preventing afterswarms, and it worked to perfection.

2. With a strong colony, how many supers of 24 sections each would they need on at once in a heavy honey-flow? and how do you tier them up, by adding the new super underneath, or on top of the one being worked in?

3. Is there any such a device used among the bee-keepers as a super-lifter to hold the supers up while adding a new one, etc.?
Iowa.

Answers.—1. Although it may have succeeded in 2 cases, it will not generally succeed without close watching and some trouble. If you put the trap on before the prime swarm, the bees will keep swarming and returning. Finally a young queen will emerge, and the swarming will be still fiercer. If you remove the trap too soon, a swarm may go off; if too late, you will have a drone-layer.

2. A strong colony in the height of a heavy honey-flow will have not less than 3, and may have 7. The new supers are added under, till near the close of the flow, when they are put on top. You will be interested in reading particulars in "Forty Years Among the Bees."

3. Yes, several have been devised, but not many use them.

Kept Them in the Archives

McJigger—Of course Noah must have taken bees with him.

Thingumbob—Oh! of course.

McJigger—Just think how they must have stung the animals as they flew about.

Thingumbob—Oh! I guess Noah had sense enough to keep them in the archives.

Reports and Experiences

A Hot Time in Texas

We have had no rain for 9 weeks. The thermometer is at 114 degrees in the shade, and everything is burned up. The honey crop is short, but of excellent quality. Bees will be in good condition for winter if they don't have to use up their present stores before. There is a good supply of alfalfa honey in the brood-chambers, which I will leave there, as I don't think honey is ever too good for bees in winter. O. Saunders.
Trenton, Tex., Aug. 18.

Swamp Milkweed

What is the name of the enclosed flower, and what kind of honey do the bees get from it? My bees are working on it in full force.
Chas. D. Blaker.
Minneapolis, Minn., Aug. 4.

[The plant is the swamp milkweed—Asclepias incarnata—and as it depends wholly upon insect visits for fertilization, it amply repays them by offering a generous lot of sweet in return.—C. L. Walton.]

Short Honey Crop

The honey season here started fine, with a good flow from first crop of alfalfa and sweet clover, but August was dry, and from some cause the second and third crop of alfalfa yielded almost nothing. I bought 20 colonies in early June, and as most of these were weak I got them all built up strong just when the flow let up. I had only 5 swarms from 35 colonies. All are in good shape for wintering. My crop, all told, is about 800 pounds, and probably 100 unfinished sections that I will feed back.
Louis Macey.
North Platte, Nebr., Sept. 20.

Honey Crop Almost a Failure

The honey crop this year in this section is almost a total failure. Last year (1908) I produced 3970 sections, grading No. 1 and fancy, from 23 colonies, spring count, and increased by natural swarming to 46 colonies. This year (1909) I started with the 46 colonies, increased to 52 by natural swarming, and got less than 500 sections of a poor grade honey. I removed all supers the first of September, and my bees have filled their hives and are in fine shape for the winter. In 5 years I have not lost a colony in wintering in the cellar. S. L. Mottinger.
Plainfield, Ill., Sept. 27.

Hiving Swarms—Poor Season

On page 267, Mr. Doolittle goes to a good deal of unnecessary work to get a pole, etc., to hive his bees. My plan is to have the hive ready, and when a swarm issues cage the queen, move the old hive from the stand, and place the new one in its place, and in a very short time the swarm will be returning (often not clustering at all). As soon as they commence to return release the queen at the entrance of the hive and she will march in, and as soon as all are in move the swarm to where you want it and return the old hive to its former place, and all is done. They will not be gone very long, as they soon miss the queen.

It was a very poor season here for honey, as it has been pretty wet, cool and windy, and hardly any white clover, as the clover was nearly all killed by the dry season of 1908, and the honey of this season is of poor quality and pretty dark.
Josiah Swinehart.
West Salem, Ohio, Sept. 6.

Good Season for Honey—Hogwort

This has been a very good season with me for honey. The goldenrod is in bloom, and we have had a good rain to break the long dry spell. It has been very dry here. I have 5 colonies from which to take the honey, although I have taken it off once before.

Now the rain will put some nectar in the fall flowers, and I will get some honey yet. Everybody seeing my success is wanting to go in the bee-business, and is wanting bees or honey.

What is the name of the weed I send you? It grows abundantly here. I see a bee on it once in a while. Is it any good for bees?

R. B. PERRY.

Greenfield, Tenn., Sept. 10.

[The name of the plant asked about is Hogwort—Croton capitatus—and is somewhat abundant in dry fields South and West. So far as I know it is of little if any value as a bee-plant.—C. L. WALTON.]

Poorest Season in Years

I have been keeping bees for 3 years, and have got up against the real thing this year. The early honey was as black as crude oil—no white clover at all, and the fall crop is as poor. I will have to feed all of my bees for winter. I haven't had a bee go up in the supers. We have had the poorest season for years.

W. T. KELSEY.

St. Francisville, Ill., Sept. 28.

More Than An Average

We have harvested more than an average crop of honey in Georgia this season, and our increase has been more. We have never harvested an overwhelming crop of honey here or had a total failure, except in a few locations where we have only one source of honey. Our average is never very high, nor varies much in some localities. Bee-keeping here pays a large percent on the capital and time expended, and can be depended upon for the only source of living, and some surplus money with a reasonable investment and proper management.

Cordele, Ga. J. J. WILDER.

Only Half a Crop

I will give an outline of the honey crop here so far. The first small gain was in fruit-bloom. Bees hardly held their own until June 5. June 18 to 20 there was a great flow. On the 17th, 18th and 20th (just 3 days), the scale colony made 34 pounds clear gain—the greatest for 3 days I ever had—all white clover. The first of July the flow seemed to stop, and by the 10th bees were doing nothing. I have only half a crop to report for this part of Missouri. We have had very little honey-dew here at home, but I hear some complaint among my neighbors. I never saw so bright prospects cut short so quickly. Bees are doing nothing now, but the fields are yellow with fall flowers. We expect a fall flow.

IRVING LONG.

Marceline, Mo., Sept. 14.

Foul Brood in New York

Who told Mr. Byer, page 298, that black brood seemed to be under control in New York State? Somebody has been fooling him. It is raging as badly as it ever did, but in new sections. Where it has spent itself and destroyed nearly all the bees in sight "it seems to be under control," but still keeps marching on, and I ought to know what I am talking about, for it has marched into 6 of my yards this year. And after I had *shaken it out* and begun to boast that I was on top, back it came again this fall, hitting every colony in one yard of 45, and a large number in the home apiary. You might as well get the old-fashioned chills and fever if you get black brood, for you will have to shake and shake until all the careless and indifferent bee-keepers about you lose their bees.

"A NEW YORKER."

Rendering Combs Into Wax

Where exhaust steam is available let the puff below the bottom of the hive be 3 inches extra deep with a sieve bottom. When these combs have fallen down shovel them with a fire shovel in a bushel bag, tie it and tread it over slats over a box or tub one foot deep, with large rubber boots having felt socks in them. Then to make a clean job of it throw the pressed slumgum into a boiler of boiling water and tread again over a separate tub or box, if you desire the best separate, a foot or 10 inches deep, and 2 feet square with taps to let out the wax and water if many combs are to be done.

If melting combs over a cook-stove with 2 boilers on, one can place the hive with sieve bottom over the front one, then after the combs have fallen, shovel them into the back one, then dip into the tread-mill bag; or, better, first have a bag to fit the inside of the above hive, and when combs fall into it, tie it and tread again over another tub or box, thus securing superior wax, having never touched water in the first box.

R. F. WHITESIDE.

Little Britain, Ont., Sept. 2.

Poor Honey Crop

The honey crop is poor here this year. The bees filled only the brood-chamber—just enough for winter.

LAWRENCE MCDONALD.

Turlock, Calif., Sept. 16.

Severe Stinging

A friend of mine, a few weeks ago, in cutting a bee-tree was stung on the arm, which produced unconsciousness lasting about one and a half hours, but no further ill effects.

Spargursville, Ohio. J. R. COOPER.

Very Light Honey Crop

The honey crop here this year has been very light. From 25 colonies I have received about 300 pounds of comb honey, as compared with 800 pounds from only 15 colonies last year. I will try to winter about 65 colonies next winter, and hope for more honey next year.

JOHN EGENES.

Story City, Iowa, Sept. 15.

Better Than Last Year

I have done better this year than last, starting in the spring with 5 colonies, one queenless, and now have 15 colonies. I have taken off 150 pounds of fine alfalfa honey and 300 pounds or more are on yet. It has been dry this year, having only 4 rains from 2 to 9 weeks apart, just when the flow was on. I have increased by swarming and artificial increase.

E. CARLY GOLDSMITH.

Pond Creek, Okla.

Not Much Surplus—Too Dry

Bees did not give much surplus here on account of dry weather in July and August. Goldenrod is blooming now and bees are getting pollen.

I am going to try for some strawberry honey next season. There are several hundred acres of strawberries around here. Several people keep bees here, but there are none whom the bees keep.

One man 70 years old has kept bees 30 years. He said to me that the bees will kill off one of their queens when honey gets scarce! I thought to myself, a man can get too old to learn unless he reads a bee-paper.

The bees here are nearly all blacks. The moth is bad on black bees or vacated combs. I find this out by inspecting hives all over the county. I bought 20 colonies of bees that I am feeding up for winter. I wired all my frames and used full sheets of foundation. I will run for comb honey.

L. W. BENSON.

Anderson, Mo., Sept. 27.

Hunting Bees in Trees

I see in the last Bee Journal an enquiry as to some method of hunting wild bees, or to locate bee-trees in the timber. I here give an old-time method:

Prepare a small box with a slide in the top large enough to hold a one-pound box of honey flying flat. Now take a small oil-can, fill it with syrup made with sugar, or a little strained honey thinned with water, and a very small box, small enough to put in a vest-pocket, filled with fine white flour. And last, but not least, a large piece of old strong honey-comb without honey in it. Thus equipped proceed into the timber where you wish to locate bee-trees, on some nice, still, warm morning after the first light frost. Select an open place where the flight of a bee can be traced some distance. Now light a little fire with bark or chips. If convenient take with you an old pan or skillet. Drop a piece of the old honey-comb into the fire. The odor of it burning will soon attract bees if there are any in that vicinity. Now open the slide on the box in which you have the pound of honey. Uncap the cells on the upper side, and a bee or bees will soon be filling with honey. Now take your can with honey and drop a little just back of the head and between the wings. Be careful and don't get any on the wings. Now drop on a little of the flour. As soon as the bee is filled watch it and the direction it takes. If it returns soon its home isn't far. It will soon come back with others. Move on in the line, burn some comb, and you will soon "line" them home.

JOSEPH RICHARDS.

Hampshire, Ill., Sept. 3.

Comb Honey Production

One of the comb honey specialists here has tried Doolittle's system of comb honey production, and is eloquent in its praise. He simply puts the frames containing brood right over the comb honey sections. An excluder is then placed over the brood-frames, and the bee-escape taken out. The hive containing old brood is then removed at the end of 6 days, and a new colony formed. His entire stock of comb honey has been sold to a Detroit firm for 13½ cents per pound, and the extracted honey to a Michigan firm for 10 cents. A Minnesota lady, last year, got 15 cents per pound for extracted, and customers bought it right at her apiaries. She took the first prize for extracted honey at the St. Louis Fair, and people had confidence in the purity of the honey.

The article by W. K. Morrison, in the September Review, was read by me with great interest. It relates to the production of comb honey without separators. This has been a great honey season here.

GEO. J. MOLONEY.

Wolverine, Mich., Sept. 14.

Mountain Mint—Bees Doing Well

I am enclosing a small sample of flowers and leaves of which I would like to know the name. I see quite a lot of it, and it must certainly be a fine honey-plant. I don't think I ever saw bees work so eagerly in any bloom as this, as many as a half-dozen being on a single stem like the sample, at one time. I think it furnishes only honey, as I have never seen any bees working on it with pollen on them. It grows about 18 inches high, and on ground that has not been cultivated.

Bees are doing well here, the second crop of white clover being now in bloom. We need rain very badly. We had a heavy crop or fall of honey-dew here which we would have been glad to have done without, as it was badly mixed with the first crop of white clover. Swarming was light, not quite an average of one swarm per colony. There seems to be a good demand for honey at 10 cents for chunk or extracted, and 12½ cents for nice section honey.

H. S. CARROLL.

Lentner, Mo., July 25.

[The flower is mountain mint—Koellia virginiana—a plant infesting old fields and thickets all through the Middle West. The mint family to which this flower belongs is famous for rich nectar, and bees visit these flowers wherever found.—C. L. WALTON.]

Preventing Overheated Brood

I will give "Michigan" a tip or two (see page 270), and he will not have any more overheated brood at least. By taking a small bit, 3-16 or ¼ inch, and filling the outside case with small holes, then dropping a few down around at the top between the two walls, as his cases are air-tight or less, they would not be so hot, or hot at all.

While I do not think much of the 2-inch double-walled hives sent out by the factories today, yet when they are well ventilated they are much better than single-walled hives—for me, at least. (I have 5 of them). And what few bees I keep here in the city are in a very hot place. By setting the single-walled hives in a box 6 inches longer and 8 inches wider, making an air-space 3 inches at the end and 4 inches on each side, and a 1½-inch entrance, the box is kept from 6 to 8 inches above the supers, a gable cover over the supers with the 2 lower boards of the cover slightly apart in the center of the gable cover, and no cover during the summer over the box. The bottom of the box is 4 inches from the ground filled with these small holes, and the inside bottom-board 2 to 4 inches above the lower one. I have had no trouble this summer—no queen-cells, no loafing at the entrance, or laying out in front in colonies in these boxes. The colonies transferred in these boxes in July and August quit their bad ways and almost stopped their fanning at the entrance during the hottest days.

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With patent American cap, in reshipping cases of a dozen each—one case, 90 cents; 6 cases, $5.25. In one-gross crates, $4.90 per crate.

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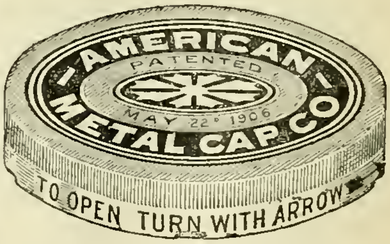

Engravings for Sale.

We are accumulating quite a large stock of bee-yard engravings and other pictures used from time to time in the American Bee Journal. No doubt many of them could be used by bee-keepers in their local newspapers, on their letterheads, on souvenir cards, or in other profitable or interesting ways. If we can sell them it will help us to pay for others that we are constantly having made and using in these columns.

We do not have a catalog or printed list of the engravings, but if you will let us know just which you want we will be pleased to quote you a very low price, postpaid. Just look through the copies of the Bee Journal and make your selection. Then write to us.

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State kind, how put up, and lowest cash price.
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CYPRIAN, Carniolan, Caucasian, Italian Queens Select untested, $1.00. Select tested, $2.00. Bees $8 colony. Supplies and Honey. 6A1y
W. C. MORRIS, Nepperhan Hts., Yonkers, N. Y.

Souvenir Bee Postal Cards

We have gotten up 4 Souvenir Postal Cards of interest to bee-keepers. No. 1 is a Teddy Bear card, with a stanza of rhyme, a straw bee-hive, a jar and section of honey, etc. It is quite sentimental. No. 2 has the words and music of the song, "The Bee-Keeper's Lullaby;" No. 3, the words and music of "Buckwheat Cakes and Honey;" and No. 4, the words and music of "The Humming of the Bees." We send these cards, postpaid, as follows: 4 cards for 10 cents, 10 cards for 20 cents; or 10 cards with the American Bee Journal one year for 80 cents. Send all orders to the office of the American Bee Journal.

◆

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We have about 30 copies left of the book, "Langstroth on the Honey-Bee," of the edition just preceding the last. It is practically equal to the latest edition, and we will mail them so long as they last, for 90 cents a copy. (The regular price is $1.20.) Or, we will send one of the above 90-cent copies with the American Bee Journal one year—both for $1.50. Surely this is a bargain. Remember, we have only about 30 copies left, so if you want one of them you will need to get your order in quickly. Send to the office of the American Bee Journal, 146 W. Superior St., Chicago, Ill.

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2000 layers and 3000 chicks can be cared for without help by one person and still have time for other work.

$25.00 saved on every one hundred chicks raised to maturity by this wonderful Briggs System.

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THIS BOOK HAS NEVER BEEN SOLD FOR LESS THAN $5.00 PER COPY, and thousands covering several editions are being followed by equal numbers of successful poultry-raisers.

WE HAVE PURCHASED THE SOLE RIGHTS OF PUBLICATION FROM THE AUTHOR, MR. BRIGGS, and have just REDUCED THE PRICE FROM $5.00 TO $1.25 PER COPY, including one year's subscription to "POULTRY SUCCESS," regular price 50 cents; so under this great offer you get the Briggs System book for only 75 cents. We have also just taken off the press "BRIGGS SECRETS IN POULTRY CULTURE," containing most valuable and never before published secrets that have produced wonderful and easily obtainable results. These secrets are alone worth the the price of the book, but under our great offer you get them FREE.

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HOSTERMAN PUBLISHING CO., Briggs Desk 49, SPRINGFIELD, OHIO

An Orphanage Appeal for Help.—The Editor of the American Bee Journal is the secretary of the board of trustees of an orphanage or children's home located at Lake Bluff, Ill., 30 miles north of Chicago. He has wondered if there were not quite a number of the benevolently inclined among the readers of the American Bee Journal who would like to send to that orphanage something either to eat or to wear, or even money, for the 135 children cared for there. They are all the way in size and age from infants to 12 years. The way to do is to ship by freight, *always* prepaying the charges. Perhaps we might suggest vegetables, extracted honey, o ts and corn (they have a horse), clothing (new, or good second-hand), etc. Any mother will know just what boys and girls 12 years or under will need to wear or to eat. It is the most economically managed institution of the kind that we know anything about. Many of the children there are for adoption. If you feel that you can, or would like to help such a worthy cause, send what you can spare from your abundance to Lucy J. Judson, Supt., Lake Bluff Orphanage, Lake Bluff, Ill., and please don't forget to prepay charges on what you ship. Also put your name and address on each package, and, if you like, write a letter to accompany it, either in the package or by mail. If you desire more particulars, write the superintendent.

The Chicago-Northwestern Convention.—The annual meeting of the Chicago-Northwestern Bee-Keepers' Association will be held in the Briggs House, northeast corner Fifth Avenue and Randolph St., Chicago, Ill., Wednesday and Thursday, Dec. 1 and 2, 1909. The first session will be at 10 a.m., Dec. 1st. The Executive Committee is planning for the best convention this Association has ever held. A good many bee-keepers know what that will mean, for they have attended former meetings. The time is during the International Live Stock Exposition, which is held annually for one week in Chicago, this year beginning Nov. 27th and ending Dec. 4th. It is hoped that bee-keepers both far and near will arrange to come to Chicago during this time, so as to attend the convention of bee-keepers. It is expected that there will be the best representation of the leading bee-keepers of America that has met together for many years. You will miss it if you are not there also. While the Question-Box will not be slighted, a very complete program is being arranged that will cover some of the most vital questions of interest to bee-keepers just now. Come and help make it a banner convention in every way.

H. F. MOORE, *Sec.*, Park Ridge, Ill.
GEORGE W. YORK, *Pres.*, Chicago, Ill.

Our Clubbing List.

We have arranged with some of the best magazines and other publications to offer them in connection with a year's subscription to the American Bee Journal. If there are any others that you would like to subscribe for, be sure to let us know what they are, and we will quote prices applying only to the United States, outside of Chicago:

American Bee Journal one year (75 cts.)		Both
With American Agriculturist	$1.00	$1.50
" American Sheep Breeder	1.00	1.60
" Bee-Keepers' Review (new)	1.00	1.60
" Breeders' Gazette	1.75	2.20
" Canadian Bee Journal	1.00	1.60
" Century Magazine	4.00	4.50
" Circle Magazine, The	1.50	2.00
" Commoner, The	1.00	1.50
" Country Life in America	4.00	4.50
" Delineator, The	1.00	1.60
" Designer, The	50	1.15
" Dressmaking at Home	1.00	1.60
" Etude, The (musical)	1.50	2.00
" Everybody's Magazine	1.50	2.00
" Garden Magazine	1.00	1.60
" Gleanings in Bee Culture	1.00	1.50
" Good Housekeeping	1.00	1.50
" Guide to Nature, The	1.00	1.60
" Harper's Weekly	4.00	4.50
" House Beautiful, The	2.50	3.00
" Housekeeper, The	.75	1.25
" Human Life	1.00	1.50
" Ladies' Home Journal	1.50	2.00
" Little Folks	1.00	1.60
" McCall's Magazine	.50	1.15
" McClure's Magazine	1.50	2.00
" Modern Priscilla	.75	1.35
" Mothers' Magazine	.50	1.15
" Munsey's Magazine	1.00	1.60
" New Idea Woman's Magazine	.50	1.15
" Ohio Farmer	.75	1.35
" Outing	3.00	3.50
" Popular Science Monthly	3.00	3.50
" Recreation	3.00	3.50
" Review of Reviews	3.00	3.50
" Scrap-Book	1.00	1.60
" Scribner's Magazine	3.00	3.50
" St. Nicholas	3.00	3.50
" Suburban Life	3.00	3.50
" Success Magazine	1.00	1.60
" Sunday-School Times	1.00	1.60
" Wallace's Farmer	1.00	1.60
" Woman Beautiful, The	1.00	1.50
" Woman's Home Companion	1.50	2.00
" World's Work	3.00	3.50
" World Today, The	1.50	2.00
" Youth's Companion (new)	1.75	2.25

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FARM NEWS, 107 Factory St., Springfield, Ohio

Please mention Am. Bee Journal when writing.

QUEENS

of

Moore's Strain of Italians

Produce workers that fill the supers, and are not inclined to swarm. They have won a world-wide reputation for honey-gathering, hardiness, gentleness, etc.

Mr. W. Z. Hutchinson, editor of the Bee-Keepers' Review, Flint, Mich., says: "As workers, I have never seen them equaled. They seem possessed of a steady, quiet determination that enables them to lay up surplus ahead of others. Easier bees to handle I have never seen."

My queeens' are all bred from my best long-tongued three-banded red-clover stock (no other race bred in my apiaries), and the cells are built in strong colonies well supplied with young bees.

I Am Now Filling Orders

By RETURN MAIL

REDUCED PRICES

Untested queens, 75c. each; six, $4.00; doz., $7.50. Select untested, $1.00 each; six, $5.00; doz., $9. Select tested, $2.00. Extra select tested, $3.00. Breeders, $10.00.

Safe arrival and satisfaction guaranteed. Descriptive circular free. Address, 7Atf

J. P. MOORE, Queen-Breeder,
Rt. 1, Morgan, Ky.

Standard Breed

Queens from Our Superior Golden Stock

Untested, 1 for $1.00; 6, $5.00; 12, $9.00. None superior to our queens, and but few equals.

Mr. F. Danzenbaker, the inventor of the 20th Century Smoker, wrote us March 5, 1908, that he has a good opinion of our strain of Italian bees:

If they are as good as the one Mr. L. L. Brockwell, of Edlow, Va., sent me to exhibit at Jamestown Exposition. I didn't get her until Sept. 19th, on a single frame in an observatory hive. Her bees stored and capped 9 lbs. of honey in ready-built combs of 4x5 sections in two weeks or 9 working days, as 5 days of that time were rainy or too cool for bees to fly. If it had been a 10-frame colony they surely would have gathered 60 lbs. or more. I offered Mr. Brockwell $10 and 4 young queens in May, but he declined. I then asked him if he would let me have her for $25; he said no. I would have given that for her to breed from. I then asked if he would sell her for $50. He said no, but that I could have eggs from her in May. So you see what we both think of her for a breeder.

Very truly, F. DANZENBAKER.
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T. S. HALL, Jasper, Pickens Co., Ga.

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By members of the Michigan Bee-Keepers' Association. For free annual booklet giving names and addresses of members, address the Secretary, 7Atf

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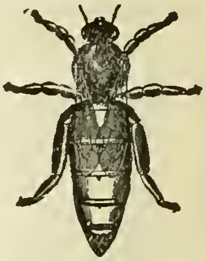
230 Woodland Ave., Detroit, Mich.



DOOLITTLE'S

"Scientific Queen-Rearing"

This is G. M. Doolittle's master-piece on rearing the best of queens in perfect accord with Nature's way. It is for the amateur and the veteran in bee-keeping. The A. I. Root Co., who ought to know, say this about Doolittle's queen-rearing book:

"It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of modern methods of rearing queens wholesale."

Mr. Doolittle's book also gives his method of producing comb honey, and the care of same; his management of swarming, weak colonies, etc. It is a book of 126 pages, and is mailed at the following prices: Bound in cloth, $1.00; bound in leatherette, 75 cents.

Special Clubbing Offer

We offer a cloth-bound copy of this book with the American Bee Journal one year—both for $1.40; or a copy of the leatherette-bound edition, with the American Bee Journal one year—both for $1.15. The cloth-bound book given free for getting 3 new subscribers at 75c each; or the leatherette-bound copy given for 2 new subscribers.

Every bee-keeper should have a copy of Mr. Doolittle's book, as he is one of the standard authorities of the world on the subject of queen-rearing and everything else connected with bee-keeping and honey-production.

George W. York & Co., Chicago, Ill.

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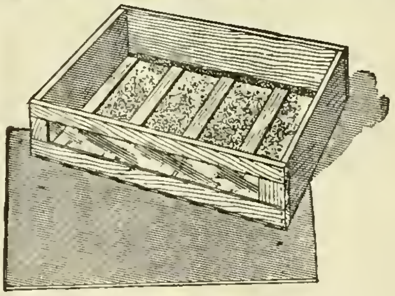

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of fine white basswood with one-piece cover and bottom. Can furnish with either corrugated paper or "no-drip sticks."

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are made for any number or size of sections with either 2 or 3 inch glass front. **We have a large stock on hand** which means prompt shipment, and our prices are lowest.

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1-gallon Cans—10 in a box
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Italian Queens

For Sale

Untested, 75c each. Reared from imported queens. Price-list free. 5A7t

O. F. FULLER, Blackstone, Mass.

Doolittle & Clark

are now sending out choice ITALIAN QUEENS at the following prices: Untested, $1.00 each; 3, $2.50; 12, $9.00. Tested, $2.00 each; 3, $5.00; 12, $18.00. Breeders, $2.50, $5.00, $10.00. 5Atf

Borodino, Onondaga Co., New York

Italian Queens

50 Select Tested Queens $1.25 each. These are Red Clover Queens mated to the Golden Italian Drones. Select Untested Queens, $1.00 each; six, $5.00; 12, $9.00; 20 or more, 65c each.

W. M. PARRISH,

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Say, Mr. Bee-man

How about that old, played-out Queen? Now is the time to replace her, or make increase. Try the famous BANATS and CARNIOLANS. 75 cts each; $8.00 per doz.

GRANT ANDERSON

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How About Your Advertising?

Have you anything to sell? Any bees, honey, hives, or anything else that you think the readers of the American Bee Journal might want to buy? If so, why not offer it through our advertising columns? See rates in the first column of the second page of every number of the Bee Journal. We try to keep our columns clean and free from any dishonest advertising. Such cannot get in, if we know it. We want the patronage of just as many clean, straight, square-dealing advertisers as we can secure. No others need apply to us for space.

BE SURE TO READ ALL OF THIS COLUMN

After Jan. 1, 1910

American Bee Journal $1 a Year

For some time we have been considering the increase of the yearly subscription price of the American Bee Journal from 75 cents a year to $1.00. In fact, many of our best subscribers have written us that it really never should have been reduced in price, in view of the richness of its contents and general helpfulness to its readers. But among the real reasons for such increase are the greater cost of its production, and that the present price of 75c is, and has been, too low to maintain the "old reliable" American Bee Journal at its present high standard of excellence. And, surely, no reader would want us to lower that standard in any particular.

We may say further that we are planning certain improvements that will increase greatly the cost of publishing the American Bee Journal another year—improvements that will more than offset the small increase of 25 cents a year in subscription price—even contemplating a 48-page Journal, if possible to do it. The Editor is now devoting **all** of his time to the Bee Journal, which fact alone should tend to make it more valuable as the months pass on.

Nearly Three Months Before the Raise in Price is to Go into Effect

But it will be noticed that the $1.00 price does not become effective until Jan. 1st next, or nearly 3 months yet. And during the time intervening we are going to allow all who wish to do so, to pay their subscriptions **two years in advance at the present 75-cent rate.** That is, you can pay all back dues (if any) and for all of 1910 and 1911 at 75 cents a year. So, really, there will be no raise in price for over 2 years to all who pay their subscriptions **before next Jan. 1.**

Save 50 Cents by Subscribing Before Jan. 1st

By paying subscriptions for 1910 and 1911 any time between now and the end of this year (1909), you will save just 25 cents a year, or 50 cents. But we cannot allow subscriptions to be paid beyond the year 1911 at the present 75-cent rate. Please tell your neighbor bee-keepers about this, so that they, too, can take advantage of the special offer for 2 years beyond 1909.

Clubbing and Special Offers to Stand the Rest of this Year

Our Special and Clubbing Offers will all stand until the end of this year (1909). So none of our present subscribers can really object to the increase in subscription price, for they have the opportunity of paying their subscriptions two whole years beyond this year at the present 75-cent price—by sending them in **before next January 1st.** (Of course, if any have already paid their subscriptions beyond 1911, such will stand as now credited.)

You are Invited to Help Increase the Bee Journal Subscription List

We offer many liberal premiums for getting **new** subscriptions for the American Bee Journal. We hope our readers will do what they can to get their bee-keeping neighbors to subscribe, and thus earn some of the premiums we offer. Let us work together for each other's interest and advancement, and for the good of bee-keepers everywhere.

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QUEENS
Of High Quality

Our queens are reared by the most **approved methods** by a **queen specialist** of 30 years' experience.

We breed the **Leather-Colored, Red Clover, and Golden Italians.**

We solicit the trade of all bee-keepers wishing to secure a **hardy, prolific race** of Italians, whose **honey-getting qualities** have been proven **superior.**

Select untested.....	$ .75	½ doz.	$4.00	1 doz.	$ 7.50
Tested.............	1.00	" "	5.50	" "	10.00
Select tested.......	1.50	" "	8.00	" "	14.00

Queens by return mail. Prices for large quantities on application. Circular free.

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Read what J. I. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter. 50 chaff hives with 7-in. cap, 100 honey-racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
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That covers the whole Apicultural Field more completely than any other published, send $1.20 to

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—FOR HIS—
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140 Colonies of Bees in 8-frame hive; also about 40 empty Hives, most of them new; with 500 comb-honey Supers, a lot of Foundation and Sections, and other bee-supplies. No foul brood in this Valley. Address,

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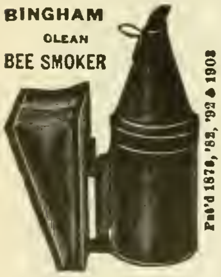
HAND-MADE SMOKERS



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G. B. Lewis Co., Watertown, Wis.—We have sold these Smokers for a good many years and never received a single complaint.

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All Bingham Smokers are stamped on the tin, "Patented 1878, 1892, and 1903," and have all the new improvements.

Smoke Engine—largest smoker made	$1.50—4	inch stove
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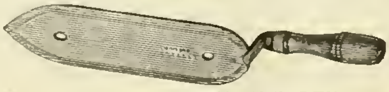
Large—lasts longer than any other	.90—2½	"
Little Wonder—as its name implies	.65—2	"

The above prices deliver Smoker at your post-office free. We send circular if requested.

Original Bingham & Hetherington Uncapping-Knife.

T. F. BINGHAM, Farwell, Mich



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There are many of these in this town who

BEE-KEEPERS

Write us now for our Catalog and get low prices on good, honest,

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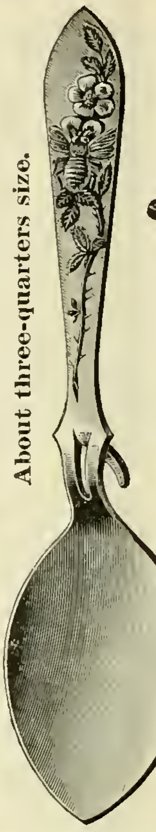
Our specialty is making Sections. All other goods up-to-date.

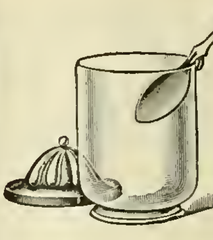
AUG. LOTZ & SON, Cadott, Wis.

10A34t Please mention the Bee Journal.

An English Honey-Spoon



About three-quarters size.



Over in old England they have a handy honey-spoon, or at least a spoon that has a device in its handle that will prevent it from dropping down in the jar of honey on the dining-table, thus soiling the fingers and spoiling the table-cloth. It is a very ingenious idea, and should have extensive demand among honey-consumers, especially bee-keepers. It is well plated on high-class nickel, and has a beautiful raised design on the upper side of the handle, as indicated in the picture herewith. We have secured some of these very unique spoons, and will mail them at 90 cents each. Or, we will send spoon and the American Bee Journal one year—both for $1.50.

The spoon would be fine as a gift for Christmas, birthdays, etc.

The editor of the Bee Journal has used one of these spoons for a number of months in the honey-glass which is always on his table, and he would not like to be without this spoon again, as it is so convenient, and also unusual in this country. We can fill orders promptly now. You certainly would be pleased with this honey-spoon, and so would any one to whom you might present it. Send all orders to,

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On Woodcraft and Nature

Is always fascinating to him who loves hunting and fishing especially. There are many enjoyable and profitable facts that you should know about the great

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Great Source of Profit On the Farm During the Winter. You will find these topics all dealt with entertainingly and authoratively in that splendid 160 to 200 page, illustrated monthly magazine

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We mail the book for $1.20, or club it with the American Bee Journal for one year—both for $1.70. This is indeed a splendid chance to get a grand bee-book for a very little money.

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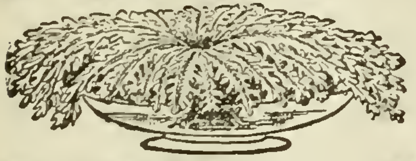

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ESTABLISHED 1889

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Standard Hives with latest improvements, Danzenbaker Hives, Honey-Boxes, Comb Foundation and everything that is used in the bee-yard. Large illustrated catalog mailed free. Finest White Clover Extracted Honey for sale in any quantity desired.

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Tennessee-Bred Queens

37 Years Experience, breed 3-band Italians only.

	November 1st to July 1st			July 1st to Nov. 1st		
	1	6	12	1	6	12
Untested	$1.00	$5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select Untested	1.25	6.50	12.00	1.00	5.00	9.00
Tested	1.75	9.00	17.00	1.50	8.00	15.00
Select Tested	2.50	13.50	25.00	2.00	10.00	18.00

Breeders $4.00. Add twenty percent for queens to be exported.

Nuclei, without queens: 1-frame, $2.50; 2-frame, $3.50; 3-frame, $4.50. 1 Full Colony, 8-frame, $9.00.

Select the queen wanted and add to the above prices.

NOTE

I have transferred to my son, Benj. G. Davis, my straight 5-band and Golden department, and in order to receive the promptest attention, all correspondence for these should be sent direct to him. He practically grew up in my queen yards, rears queens by my methods, has had charge of this department for years, and understands his business.

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We have had printed an edition of over 50,000 copies of the 16-page pamphlet on "Honey as a Health-Food." It is envelope size, and just the thing to create a local demand for honey.

The first part of it contains a short article on "Honey as Food," written by Dr. C. C. Miller. It tells where to keep honey, how to liquefy it, etc. The last is devoted to "Honey Cooking Recipes" and "Remedies Using Honey." It should be widely circulated by those selling honey. The more the people are educated on the value and uses of honey as a food, the more honey they will buy.

Prices, prepaid—Sample copy for a 2-cent stamp: 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed **free** at the bottom of front page on all orders for 100 or more copies.

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Italian Bees for Sale

1 colony, $5; 2 for $9; 5 for $20. Queens—Untested, 75c each; 6 for $4; Tested, $1 each; 6 for $5. Will put swarms into any style hive to suit purchaser. 5Atf

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1000 Colonies

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Cuts up scrap bones easily and quickly—no trouble. Feed your hens fresh cut green bone daily and get more eggs. Send for catalogue.

Best Made
Lowest in Price

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Three-Band Golden Italians Caucasians Carniolans

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Untested	$0.75	$4.25	$ 8.00
Select Untested	1.00	5.50	10.00

Tested, $1.50; Select Tested, $2.00

We have in charge of this department Mr. Leslie Martin, formerly queen-breeder in the Apiary of the U. S. Dept. of Agriculture, Washington, D. C.

Send for our free catolog of "Falcon" Bee-Keepers' Supplies.

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Jamestown, N. Y.

Headquarters for Bee-Supplies

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At Root's Factory Prices

HONEY! HONEY!

If you are in want of EXTRACTED or COMB HONEY, we will be pleased to quote you, as we have several cars of California honey in stock. Write to-day for prices and samples.

If you have any Honey to offer, state kind it is, how it is put up, and lowest price you expect for same, delivered in Cincinnati.

C. H. W. WEBER CINCINNATI ...OHIO...
Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

Honey and Beeswax

Chicago, Sept. 22.—The receipts of honey have been taken upon arrival at from 15@16c for No. 1 to fancy white comb honey, other grades from 1@3c less per pound. White extracted, 7@8c, according to kind, quality and package; amber, 6@7c; dark grades, 5@6c. Beeswax in good demand at 30c.

R. A. Burnett & Co.

Los Angeles, Oct. 1.—The quotations on honey at the present time are about as follows: Water-white extracted, 6½c; white, 5½@6c; light amber, 4½@5c.

H. J. Mercer.

Kansas City, Mo., Sept. 23. Receipts of comb honey are light and the demand good; receipts of extracted are heavy and the demand light. We quote: White comb honey, No. 1, 24-section cases, $3.25; No. 2, $3.00; amber, No. 2, $3.00. White extracted, per lb., 7c. Beeswax, 25@30c.

C. C. Clemons Produce Co.

Philadelphia, Sept. 20. The time has now arrived when dealers are laying in their stock of honey. The amount of honey-dew scattered throughout the East has stiffened up the prices since last quotation. We quote: Fancy comb honey, 16@18c, light amber, 14@15c. Fancy water-white extracted, 8½@9½c; amber in barrels, 6½c. Beeswax firm at 28c.

Wm. A. Selser.

Boston, Sept 25.—Fancy white comb honey at 16@17c; No. 1, 15@16c. White, extracted, 8@9c, light amber, 7@8c; amber, 6@7c. Beeswax, 30@32c.

Blake, Lee Co.

New York, Sept. 24 The new crop of comb honey is now beginning to arrive quite freely from York State and near-by. It is moving rather slowly as yet, but we expect the demand to increase within the next few weeks. We quote: Fancy white, 15c; No. 1, 14c; off grades, 11@12c. No buckwheat comb honey on the market yet, and no prices established. Extracted is in fairly good demand, mostly for California Prices as a rule are about the same, and we quote as follows: Water-white sage, 7½c; light amber, 6½@7c. Honey in barrels is rather scarce. Southern and West Indian is selling at from 58@68c per gallon, according to quality. Beeswax quiet at 28@20c.

Hildreth & Segelken.

Denver, Sept. 25.—We quote our local market as follows: No. 1 white comb honey, per case of 24 sections, $3.30; No. 1 light amber, per case, $3.15; No. 2, comb per case, $3.00. Extracted, white, 7½@8⅓c; light amber, 6¾@7½c per pound. We pay 24c per pound for clean yellow beeswax delivered here.

The Colo. Honey Producers' Ass'n.
F. Rauchfuss, Mgr.

Indianapolis, Sept. 23.—There is a good demand for best grades of honey, but the market is now well supplied. Indiana bee-keepers, as well as merchants, are good buyers. Producers are being paid the following prices: Fancy white comb, 16c; No. 1 white, 14c. Finest extracted in 5-gallon cans, 8c. No demand for amber or off grades. Producers of beeswax are receiving 28@30c.

Walter S. Pouder.

Zanesville, Ohio, Sept. 24.—The demand for honey is normal, the call for best grades being in excess of the supply. For white clover comb honey, grading No. 1 to fancy, producers would receive from the jobbing trade 14@16c, and for best extracted 8½c delivered here. Best grades of white comb wholesale at 17@18c, extracted in 5-gallon cans, 9½@10c. Good clean beeswax 28c cash, 30c in exchange.

Edmund W. Peirce.

Cincinnati, Sept. 24. The market on comb honey is exceedingly brisk. We have had four cars to arrive, and sold same in large quantities from 100 to 200 cases at 14½c; in a retail way at 16c. Extracted table honey is brisk; sage at 8½@9c; amber in barrels, fair demand at 6@6½c. Beeswax slow at $33 per 100 lbs. Above prices are our selling price, not what we are paying.

C. H. W. Weber & Co.

Toledo, Sept. 24.—The market on comb honey remains about the same as our last quotations. Owing to the high prices asked by bee-men, honey is not selling as well as expected, and when the prices go to extreme people do not seem to care for it Fancy white comb honey brings in a retail way 15@16c; No. 1, 14@15c. White clover extracted is rather scarce, and would bring 7½@8½c; ambers, 5½@6½c. Beeswax, 28@30c. These are our selling prices, and not what we pay.

The Griggs Bros. Co.

We will Buy and Sell

HONEY

of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for

Beeswax

at highest market prices.

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Western Bee-Keepers We Will Show You how to save money. Send for our new catalog of the best Bee-ware made.

THE COLORADO HONEY-PRODUCERS' ASS'N, Denver, Colo.

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BEE-KEEPERS OF THE NORTH

BEE-KEEPERS OF THE WEST

Be Sure to get our PRICES on

BEESWAX

Before selling your season's Wax
or
Let us send to you our prices for
Working your Wax into

DADANT'S FOUNDATION

Many large Honey-Producers prefer our Foundation to other makes, because the bees like it best.

We can use almost an unlimited quantity of BEESWAX, and we are buying at all times of the year **at highest cash prices.**

During the season of 1909 we handled over 150,000 pounds of Beeswax.

If your Honey supply is short we can supply you with either

White or Amber Extracted Honey.

SEND FOR PRICES AT ONCE.

HONEY

If your WHITE CLOVER crop is short and you want some good Honey to supply your customers we can offer you

White Alfalfa Honey

at the following prices:

1 60-pound Can - -	10c per pound
2 60-pound Cans or more -	9c per pound
10 60-pound Cans or more	8½c pr pound

This Honey is put up in new, bright Cans, neat and clean, and we can guarantee it in every way.

Sample by mail, 5c to pay for postage.

DADANT & SONS, Hamilton, Illinois.

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BEE-KEEPERS OF THE SOUTH

$400,000,000 WORTH OF EGGS!!!

Mr. Poultryman:—Uncle Sam says the annual Egg crop is worth $400,000,000! And that the value of Poultry and Eggs produced this year will exceed $700,000,000!! Did you get **your** share of this money? If not, why not?

Milo M. Hastings, until recently the **Commercial Poultry Expert for the United States Government,** has written a Poultry Book: "The Dollar Hen." This book is a complete, thorough and concise work of 222 pages, containing over 106,000 words, also several charts, maps, etc. The purpose of this book is to tell the reader:—

MILO M. HASTINGS

HOW TO MAKE MONEY RAISING POULTRY

and NOT HOW TO LOSE IT

"The Dollar Hen" is not a "boom" poultry book. It tells as much about what **not to do as what to do.** It thoroughly discusses every phase of the poultry business, and tells how money can be made or may be lost. It gives a full account of all methods and systems of poultry raising as taught by private individuals. Mr. Hastings does not advocate complicated and expensive methods; in fact, he found such to be universal money losers.

As a Government Expert

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and has described the various necessary adaptations for different localities and conditions.

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and Over a Hundred Other Subjects of Vital Interest to Every Poultryman.

The
DOLLAR HEN
MILO M. HASTINGS

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Why spend several dollars per hen for housing when Mr. Hastings teaches you the construction of a system of housing that has been eminently successful and costs only thirty cents per hen?

Why pay high prices for theoretically "balanced rations" when a practical food chemist who has personally investigated the work of a score of experiment stations has found the most profitable poultry rations to be as simple as the corn and alfalfa diet of a Kansas steer?

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Why waste money and time experimenting with poultry when for a very small sum you can buy a complete guide to profitable poultry production? Why not make money at some one else's expense? The Dollar Hen **tells you how** in plain, simple language, and proves every statement made. Remember you are getting facts and figures that cost the U. S. Government thousands of dollars.

Poultry Press Endorses the Dollar Hen

There are no exaggerated get-rich-quick schemes discussed. It is plain common-sense from cover to cover and is well worth reading by any one that wants to learn the facts about the poultry business: Inland Poultry Journal.

It is the best book for the beginner that has lately appeared because it deals in straight facts without theorizing. What it says has been worked out in the poultry yard. Miller Purvis, Editor of Poultry.

The Dollar Hen brings out some ideas that are novel and valuable to all poultrymen: American Poultry Advocate.

THE DOLLAR HEN is a real book, substantially bound—not a paper-bound pamphlet of "System," "Secrets," or "Methods," but a book worth several dollars of any poultryman's money. THE DOLLAR HEN has a vast fund of real, practical information that can not be elsewhere secured. And think of it! You can have this authoritative and complete guide to profitable poultry production, postpaid, for only $1.00. And if you'll order now, mentioning this publication, we will include the POULTRY DIGEST for one year. Remember, we guarantee THE DOLLAR HEN to give entire satisfaction. Order to-day.

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AMERICAN BEE JOURNAL

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THE AMERICAN BEE JOURNAL

PUBLISHED MONTHLY BY

GEORGE W. YORK & COMPANY

146 W. Superior St., Chicago, Ill.

IMPORTANT NOTICE.

THE SUBSCRIPTION PRICE of this Journal is 75 cents a year, in the United States of America, (except Chicago, where it is $1.00), and Mexico; in Canada 85 cents; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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Goes to press the 6th of each month.

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Objects of the Association.

1st.—To promote the interests of its members.

2d.—To protect and defend its members in their lawful rights.

3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

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Have you a good bee-book? Many bee-keepers do not have. And that is where they make a big mistake. A bee-paper cannot take the place of a good bee-book. The paper is a splendid thing to read *in connection with the book.* On another page we make some generous clubbing offers of bee-books with the American Bee Journal.

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A new method, just published, worthy of investigation by all progressive bee-keepers. Advantages claimed for the plan of treatment. No clipping of queens' wings—no caging of queens—not even necessary to look for queens; no pinching of queen-cells—no shook swarming—no dividing—no extra expense connected with the plan—plan simple and easy to carry out—satisfactory honey crop—saves time and labor. Send to

Dr. H. JONES, Preston, Minn.,

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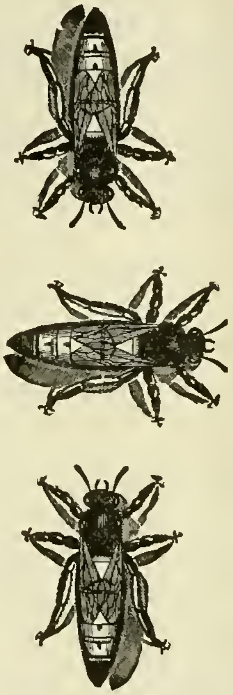
6 Queens for $4; 3 for $2.10; 1 for 75 cents



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For a number of **years** we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

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GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work. A. W. SWAN.
Nemaha, Co., Kan., July 15, 1905.

✣✣✣

GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best. She keeps 9½ Langstroth frames fully occupied to date, and, although I kept the hive well contracted, to force them to swarm, they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
Ontario, Canada, July 22, 1905.

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GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of my best colonies. N. P. OGLESBY.
Washington Co., Va., July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. MCCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for $1.20. Three Queens (without Journal) would be [illegible], or 6 for [illegible]. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

George W. York & Co., 146 W. Superior St. Chicago, Ill.

Dittmer's Comb Foundation

Is BEST, not because WE say so, but because in every case where it was tested side by side with other makes, THE BEES PREFERRED IT; and the reason for this is, ITS ABSOLUTE PURITY, of which the BEES ARE THE BEST JUDGES, and which can be obtained only by the use of DITTMER'S PROCESS for CLEANING AND PURIFYING WAX.

Our entire Process is ORIGINAL AND INDEPENDENT, and its entire Success is demonstrated by its EXCLUSIVE USE by thousands of Bee-Keepers in every part of the country, in preference to any other MAKE OR PROCESS.

We make a Specialty of Working your Wax for Cash.

Write us for Prices and Samples, which must be seen to be appreciated. We carry a full line of

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and will be pleased to mail you our Catalog and Prices. Address,

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Queens any quantity. Tested, $1.00; Untested, 75c each. 4Atf

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By Thomas G. Newman

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For Sale 40 Acres of Land and 50 Colonies of Bees. The land is all cleared and there is a 4-room house on it. The bees are mostly Italians, in 8-frame dovetailed hives, all painted, with wired Hoffman frames. There are also 40 empty Hives of the same description with all fixtures, and a quantity of Sections. This is in one of the best bee-ranges that can be found. Added to the early flow of maples, willows and dandelions, are sumac, white clover, and some basswood, followed by buckwheat and several hundred acres of goldenrod and asters, with many other wild flowers. A BARGAIN, but will be sold soon. Address, **E. H. JACKSON,**
11Atf **Fennville, Mich.**

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Sold at reduced prices. Dovetailed Hives, Sections, and everything pertaining to bee-keeping of the **very best** kept in stock. Large Warehouse on of L. S. & M. S. R. R.

Wholesale and Retail. New price-list just out **Free.** Let me figure on your wants.

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Carniolan Queens

By sending to several different Queen-Rearers in Austria for the last few years, we have succeeded in getting a desirable strain of Carniolan bees. To any of the bee-keepers wishing to try a pure Carniolan queen, it will be sent by return mail. One tested for $1.00; 6, $5.00; 12, $9.00. One untested, 75c; 6, $4.25; 12, $8.00. Address, 8Atf

Wm. Kernan, R. R. No. 2, Dushore, Pa.

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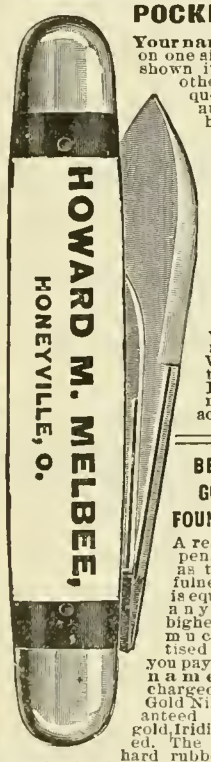

Your name and address put on one side of the handle as shown in cut, and on the other side pictures of a queen-bee, a worker, and a drone. The handle is celluloid and transparent, through which is seen your name. If you lose this knife it can be returned to you, or serves to identify you if you happen to be injured fatally, or are unconscious. Cut is exact size. Be sure to write exact name and address. Knife delivered in two weeks. Price of knife alone, postpaid, $1.25. With year's subscription, $1.75. **Free** for 4 new 75c subscriptions.

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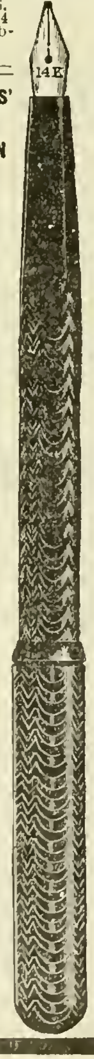

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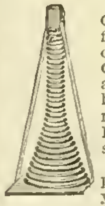

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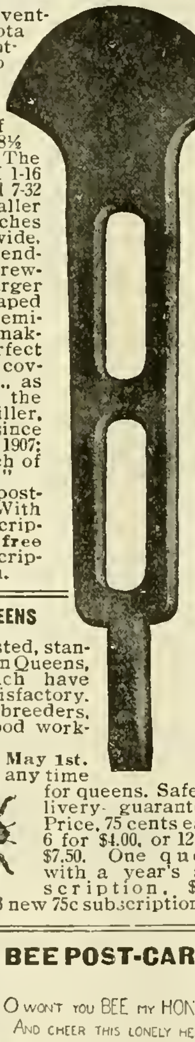

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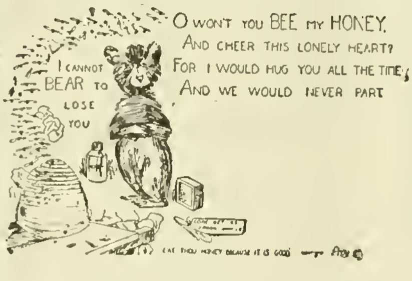
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AND CHEER THIS LONELY HEART?
FOR I WOULD HUG YOU ALL THE TIME,
AND WE WOULD NEVER PART
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AMERICAN BEE JOURNAL

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GEORGE W. YORK, Editor.
DR. C. C. MILLER, Associate Editor.

CHICAGO, ILL., NOVEMBER, 1909

Vol. XLIX---No. 11

Editorial Notes and Comments

The Price of Honey

Further reports confirm the view that in many places there is a shortage of the crop, and where is no more than can be consumed in the home market the bee-keeper has the matter of prices to an extent in his own hands. The slipshod bee-keeper may put what little he has on the market at a price below what is reasonable, but that cannot last long. The up-to-date bee-keeper can bide his time, holding his honey for what he thinks is a reasonable price.

Just at this point—deciding what is a reasonable price—there is one mistake that even well-informed bee-keepers are apt to make. In a good season, when there is enough honey produced in the vicinity to supply the local market and a little more, Mr. Bee-Keeper decides between sending to a commission merchant and selling in his own market, and concludes that after taking into consideration freight, commission, risk of loss in transportation, etc., he prefers to sell comb honey in his home market for 2½ cents a pound less than the price quoted by the commission man—a fair way to do, providing he has made the proper estimate.

Then comes a poor season; all the home product, and more too, is needed to supply the home market. Mr. B. follows the same rule; looks at the commission quotations, and fixes his price at so much below. He reasons just as he did before, that it is all the same to him whether he sends what little he has to the commission man, or sells it at home for 2½ cents less. Well, if it is all the same, suppose he sends away. The grocer will, in that case, send to the commission man, and the cost to the grocer will be the quotation of the commission man plus the freight. Even if he sends none away, the grocer will buy from the commission man after the home product is disposed of. Now is there any sort of reason why the grocer should not pay the bee-keeper at least as much as he pays the commission man, to say nothing of the freight?

A case may easily happen where an injustice to others may happen by following the same rule in a year of failure as in a flush year. Mr. B. is the only one who has any surplus in the place, and sells it to a grocer, Mr. C., at the usual 2½ cents below the commission price. The other grocers, who have to send off for their honey, must meet the price set by Mr. C., or else wait till he is sold out. Mr. B. gains nothing by it; he loses. He should learn that in short seasons, when there is no more honey produced locally than will be consumed in the home market, his price should be at least as much as the price quoted by the commission man.

Top Hive-Protection for Winter

To insist that for winter protection it is of greater importance to cover the top than the sides of the hive is nothing new. So far, however, there has been nothing said to lead one to believe that with a given amount of top protection there would not be an advantage in having along with it the most protection possible for the sides. Now comes Jay Smith, in Gleanings, and argues that it is important that the sides be *colder* than the top. His reasoning seems good. If the sides be colder the moisture will condense there and run down without disturbing the bees. Otherwise it will condense overhead and drop upon them. He uses top cushions of ground cork, sewed through and tied like a comforter; paints the inside of a telescope cover, drops in the cushion on the wet paint and lets it dry there, so as to be a permanent part of the cover.

Texas Enterprise in Fair Exhibits

The plan of having as a permanent outfit for the Texas State Fair observatory hives and attractive containers for honey is something that deserves commendation and imitation. Many a would-be exhibitor is deterred from exhibiting by the unusual trouble and expense of getting up these things. If they are provided he can send his stuff almost any old way, just so that it will arrive in good condition at the fair grounds.

Bees Killed Near Smelting Works

In the British Bee Journal an account is given of great fatality among bees near copper-smelting works. The smelters started in November. The bees in that vicinity wintered well, but began dying in March, and toward the end of May every colony within 15 kilometers of the works was exterminated. It seems almost incredible that the effect of the fumes should carry so far—more than 9 miles. The British Bee Journal raises the question whether similar cases have been known. A few years ago heavy losses from smelters were sustained by Utah bee-keepers, if indeed any colonies in their vicinity finally survived.

Syrup for Feeding Bees

In the German Praktischer Wegweiser it is advised to make syrup of equal parts of sugar and water, adding an ounce of citric acid (likely tartaric would serve the same purpose) to each 30 pounds of sugar. This is to be boiled slowly for a quarter of an hour. Some have said that sugar has already been thoroughly cooked, and that the syrup will be all the same whether boiled a long time or the sugar merely stirred into cold water. In this case, however, the presence of the acid is supposed to produce inversion of the cane-sugar, and although there may not be entire inversion, the inversion of even part is an important matter.

Latterly it is a common thing to use equal parts of sugar and water, the idea being that during the evaporation of so much water the bees have a chance to invert the sugar. If the acid produces the inversion, it seems hardly necessary to submit the bees to so much extra labor. Indeed, there seems some indication that there is to be a swing of the pendulum in the opposite direction, and that there will be a return to the old plan of having thicker syrup. Editor Root, who has been an advocate of the half-and-half syrup, at least when fed early enough, now thinks that giving such thin syrup has a wearing effect on the bees, and prefers a proportion of 2 pounds of sugar to 1 of water; or, what is about the same thing, 2 pints of sugar to 1 pint of water.

The writer has fed hundreds of pounds of syrup with excellent results, the syrup being prepared as follows:

Into boiling water on the stove sugar was stirred in the proportion of 5 pounds of sugar to a quart of water. When it was thoroughly dissolved it was taken from the stove, and at the same time an even teaspoonful of tartaric acid, previously dissolved in water, was added for each 25 pounds of sugar. Quite likely the result might be still better to have the acid added to the water before adding the sugar, thus giving a better chance for inversion.

Energy of Swarms

The generally accepted view that a newly hived swarm displays an energy that can be secured in no other way is getting some raps nowadays. R. F. Holtermann says this in Gleanings:

> "A swarm does not have to look after brood, the fruit of 3 weeks' laying in the hive, and almost all the bees in the swarm can go to the field; but in 3 weeks' time, and if a virgin queen has issued with the swarm in perhaps 5 weeks' time, there are far less bees in the colony; and if at that time a honey-flow is available the bee-keeper who has kept his bees content without swarming will gather with his one colony more than the one who allowed the colony to fall to pieces."

Nosema Apis—A New Bee-Foe

This is the name given to a new foe to bees discovered by Dr. Enoch Zander, as reported in Praktischer Wegweiser. Instead of being plantlike, as the bacilli of foul brood, this tiny miscreant belongs to the animal kingdom, and is a one-celled affair. It differs also from the foul-brood microbe in the fact that it attacks the mature bee, and not the larvæ. Nor does it respect royalty, for the queen may be affected as well as one of her workers, although as yet no drone has been affected.

Let a spore find its way into the middle intestine of a bee, and a longish parasite emerges from it, which eats its way into the wall of the intestine, increasing rapidly in size, and in the course of 4 days spores are produced. These spores are egg-shaped 1-5000 of an inch in length and 1-12500 of an inch in thickness. A bee once attacked is doomed. The wall of the intestine becomes so crowded with these spores that its own proper texture seems to disappear, and it seems composed entirely of a mass of the spores. This causes such a change in appearance that the disease can be readily diagnosed, even without the aid of a microscope. The wall of the healthy intestine is somewhat transparent, and of a reddish color. In the diseased condition it becomes opaque and milk-white in color.

Dr. Zander counts the Nosema disease more deadly than foul brood. Yet a colony mildly affected may recover of its own account. It appears in spring as a sort of diarrhea, and may appear again in May, and sometimes in June. But in the advanced stages the dejections of the diseased bee may be solid.

No sort of treatment can benefit a diseased bee, but attention must be given to prevent further spread, especially in other colonies. The chief means by which the disease is spread is by means of the soiled combs. A soiled comb given to a healthy colony carries with it the disease, as also do robber-bees, and the discharges of the diseased bees being scattered all about, the drinking water of the bees may be contaminated and the disease thus conveyed.

In a severe case it is recommended to melt up the combs, throwing the bees on foundation in a clean hive, the old hive before being used again to be thoroughly cleansed with hot soda-water. Yet there is some intimation that this may be done in a gradual manner, the brood being left to hatch out.

Sweet Clover as a Fertilizer

Prof. Thorne, of the Ohio Experiment Station, excellent agricultural authority, is quoted in Gleanings as saying, "There is no clover known of so much value in bringing up poor soils and preparing them for alfalfa and other clovers as sweet clover." Add to this the fact that sweet clover is a most excellent honey-plant, and it is made something pretty choice for bee-keepers to encourage.

Helping Bee-Pasturage

As a rule it does not pay to provide pasturage for bees. The bee-keeper goes where pasturage is already provided, and it is generally conceded that there is no paying crop that can be planted for bees alone. The crop must have some value aside from the nectar it furnishes. Yet there are at least two ways by which the bee-keeper—or at least some bee-keepers—may do something to increase their pasturage.

There are places where the linden, or basswood, is very scarce, perhaps entirely absent, and yet soil and climate are entirely adapted to its growth. It needs but the planting. In such a place an acre of ground covered with basswoods, perhaps 100 trees, would be quite an item, and a larger number would be better. But will it pay to buy an acre of ground for this purpose alone? Probably not. But if the bee-keeper can furnish the young trees and get some one else to furnish the ground for them, plant them, and take all the care of them, it would pay, and pay big. And that is exactly what may be done in not a few cases. Say the bee-keeper lives not more than a mile or two from some town where shade-trees are being planted on the streets. Even in some old towns quite a few trees are planted from time to time. Those who plant the trees may have a choice as to kinds, but are guided no little by the matter of convenience and cost. The basswood is undoubtedly a good shade-trees, and if the planter can get it without cost, he is likely to prefer it to any and all others. Perhaps a local nurseryman furnishes the shade-trees. It ought not to be a difficult thing for the bee-keeper to make an arrangement with him, by which the bee-keeper would pay a fair price for the young trees, to be furnished free to the planters.

In some places alsike clover succeeds well, but is little sown because little known. The bee-keeper, either personally or through the local seed merchants, can make it an inducement for the farmer to sow alsike by offering to furnish the seed at a bargain, frankly saying what his object is in so doing. The A. I. Root Co. have been acting on this plan, and say this in Gleanings:

> "The farmers have been putting this in, to a considerable extent, in the vicinity of all our yards. The last few years red clover failed to do well, and the price for seed has been exorbitant; and when they could get alsike clover seed at half price, or furnished free if the field was near one of the apiaries, it is not at all strange that they should put in large acreages of it."

Proportion of Eggs and Brood

It is a matter of interest to know what proportion of the cells of a brood-nest are at any given time occupied with eggs, with unsealed brood, and with sealed brood. At a time when the laying of the queen is constant, that is, at any time when for a previous period of 21 days the queen has been laying the same number of eggs daily, the problem is not difficult. Figuring according to Cowan, 3 days for the egg, 5 for the larva, and 13 for the sealed state, 3-21, or 1-7, of the cells will contain eggs, while the unsealed larva will occupy 5-21, or a little less than ¼ of the cells, and the sealed brood 13-21, or not quite ⅔.

But the queen is not always constant in her laying—perhaps never for as much as 21 days in succession. Look into a hive early enough in a season, and it may be found that all the eggs and brood do not amount to more than a single frameful. Look again 21 days later, and 4 frames will be occupied. The queen has been increasing her output, laying daily 4 or 5 times as many eggs at the close of the 21 days as she did at the beginning. If the increase has been more rapid at the latter part, it is not impossible that half the cells may be occupied with eggs, the other half with sealed and unsealed brood.

As the season for swarming approaches, the laying of the queen slackens, and ¾ to ⅞ of the cells may be occupied with sealed brood, and not one cell in 20 occupied with eggs.

Wood Splints for Foundation

Some report failure with foundation splints; others are enthusiastic over their success. E. M. Gibson, whose business is on such a scale that he runs three 8-frame power extracting outfits, says in Gleanings, that with full sheets of foundation, "if splints are used in the way that Dr. Miller recommends, the combs will be almost perfect. I bless the Doctor every day as I look at those combs built clear down to the bottom-bar with no buckling or elongated cells—a result that is impossible for me to get by the use of wires."

Where the splints work successfully, their advantage is to be seen at two parts of the comb—at the top, and at the bottom. At the top all the cells will be perfect, whereas with horizontal wiring more or less of the cells will be more or less stretched—perhaps not enough to be readily recognized by the eye, but enough so that the queen will not occupy them. At the bottom—and originally this was the only object sought by the use of splints—the comb is built entirely down to bottom-bar.

Some of the failures—probably the great majority—come from giving splinted foundation to the bees at a time when they are not building—in other words, when they are not gathering. At such times bees are not likely to use foundation in a kindly manner, and if splints are present the bees, not being crowded with other work, employ their leisure in gnawing at them, beginning at the lower part. Even in that case there will still be the benefit of perfect cells at the top, which is the more important consideration.

Miscellaneous News-Items

American Bee Journal's 50th Year—1910

Next year will be the American Bee Journal's 50th or Jubilee Year. We want to make it memorable by celebrating this unusual anniversary in several ways.

First, we want the contents of the American Bee Journal next year to be better than anything that has appeared before in its columns.

Second, we want to increase its list of regular subscribers to 15,000. In this we shall hope to have the hearty co-operation of all of its present readers. As mentioned on another page, the subscription price after next Jan. 1st, will be $1.00 a year. Until then, 75 cents. We offer many premiums to our present subscribers for the work of securing and sending in *new* subscriptions. But if any do not care for the premiums offered, we will accept *50 cents* (in stamps or otherwise) for each and every *new* subscription sent us by a present regular subscriber before next Jan. 1st. This will give you 25 cents for your trouble. Now it seems to us that *every one* of our present subscribers could get at least *one* new subscriber during the next 50 days. If that were done, we'd have several thousand over the 15,000 *before* Jan. 1st. Then we could go on to 20,000 by the end of 1910. But let's get that 15,000 *first*. Who will help do this? Don't stop at just *one* new subscription, but send in all you can. But any one could order the American Bee Journal for a bee-keeping friend for 1910 as a Christmas present. Why not do that? It would be only 50 cents, as before stated.

Third, we want to increase our advertising patronage for 1910. It ought to be two or three times what it is now. With the increased circulation it will not be a difficult matter to secure much more advertising of a general character. And when that is had, i will help us to improve the contents again; will enable us to give more pages each month; in fact, will aid in doing a number of things that we have in mind for the great benefit of our readers.

The foregoing is a part of our program during the coming year. Can we not have the earnest co-operation of *all* our readers in this effort for mutual advancement and benefit?

◆

Honey-Dew Stores

The editor of the Bee-Keepers' Review says this in his November number:

"Mr. D. E. L'hommedieu, of Iowa, asks why not feed about 15 pounds of sugar late in the fall, and leave the honey-dew right in the hive for rearing bees next spring? This is certainly a good suggestion. If I had colonies of bees with much honey-dew in their combs, I would sooner try this plan than that of extracting and feeding at this late date."

This is a valuable suggestion. In such a case, if the honey-dew is of the dangerous kind—and generally it is—it might be better to feed the syrup in December than to leave the bees to the tender mercies of honey-dew. Almost certainly the bees would consume first the syrup, and if later the honey-dew is used the result would be hetter than an earlier diet of that article.

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Pictures of Apiarists and Apiaries

EDITOR AMERICAN BEE JOURNAL: I am sure you are too modest and courteous to your subscribers to complain or ignore the egotistic wishes of some of them, therefore for the benefit of a few of a different turn of mind including myself I will say:

There are certain subscribers who think (and they are more often than otherwise beginners) that simply because they take your valuable Journal, they have a right to place their faces and a few hives of bees before the gaze of the readers of the American Bee Journal every month. One says, "I am sending a picture of *myself* and part of my apiary, which consists of 20 colonies." Another says, "I am sending a picture of *me* and my 6 colonies." It seems to me that *myself* and *me* in each case is the weightiest side of the business.

Now, my dear brother apiarists, I mean no harm or ill-feeling toward any one by these remarks. We are not all similarly constituted, by any means, but I, for one, of your subscribers, feel that space in your valuable Journal is far too valuable and always contains too much good bee-talk to be taken up in this way. I will venture far enough beyond the pale of modesty to say, that others have said that I have one of the neatest, best kept, and most beautiful apiaries in Southern California, and I am quite sure there would be nothing that would tempt or induce me to offer the picture of my apiary (which consists of 164 colonies) and of myself, for publication, unless the request were made of me to do so by some brother apiarist and a subscriber. C. L. GRIGSBY.

El Casco, Calif., Sept. 23.

We believe that *we* for some time published a request that our readers send us pictures of their apiaries for use in the American Bee Journal. Really, we don't see just why any one should object to such pictures being used in these columns. They certainly are appropriate to a bee-paper, and the small space they occupy—well, it isn't much. And they help to brighten the pages, we think.

We really hope that some one of our subscribers will write to Mr. Grigsby, asking to send to us a picture of his beautiful apiary. We'd like to see it.

The Chicago daily newspaper that we take has two pages in each issue devoted to sporting events. Now, we never look at that department at all, and yet we would never ask the publishers to omit it. Why? Because the rest of the paper is worth the price, any way.

But, after all, we are glad to receive criticisms that are meant to be helpful, though we may not always agree with them.

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Honey and Beeswax Imports

The Year-Book of the Department of Agriculture for 1908, shows that during the year ending with June 30, 1908, there was brought into the United States, 211,992 gallons of honey (or at 12 pounds to the gallon, 2,543,904 pounds); and 671,526 pounds of beeswax. It would seem from this that the home demand for both honey and beeswax is not as yet met by the home production.

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Ozokerite—Looks Like Beeswax

Mr. C. P. Dadant recently sent us a clipping taken from "The Oregonian," which was forwarded to him by a friend in the West, telling something about ozokerite, which Mr. Dadant says "looks very much like beeswax, but is lighter and harder." The clipping gives the following information:

That the product found in the sand at the mouth of the Nehalem River, popularly believed to be beeswax from a wrecked Spanish galleon, is valuable substance known to chemistry as ozokerite, was the statement made yesterday by J. J. Walter, president of the Necarney City Hydrocarbon Oil Company, a corporation organized to exploit the product. For years visitors to that coast have picked up the wax-like lumps that have strewn the beach there. The general opinion has prevailed that it was beeswax brought from Manila for one of the Spanish settlements in California, and that the ship was wrecked there. The discovery was made as early as 1813 by the Indians who brought specimens of the substance to the trading post founded by John Jacob Astor at the mouth of the Columbia.

Prior to last April a company of which Mr. Walter was a member was engaged in selling lots near where the discovery was made. At that time Kit Carson, the famous scout, now employed as an assayer by the Government, visited the place and announced that the supposed beeswax was none other than ozokerite, a product of hydrocarbon oil, found only in South America and in small quantities in Northern Europe.

At Nehalem the oil comes from a great depth to the surface, and in passing through the sand the cruder elements are worked out. This is used mainly as a lubricant. It is also used in the preparation of certain drugs. The records used by the phonographs are made from the unrefined product. Machinery has been purchased by Mr. Walter's company, and the work of developing the property is to be undertaken at once.

Our Trip to the Northwest

Last month we told of visiting the new plant now being completed by the G. B. Lewis Co., at Watertown, Wis. From there we went on to Minneapolis, and called on the Minnesota Bee-Supply Co., of which P. J. Doll is the chief moving spirit. Their business was established about 13 years ago by Chas. Mondeng and Christ Miller, who, after 1½ years failed. Business was resumed by Chas. Mondeng until in January, 1901, when P. J. Doll bought in as one-half partner. They continued to do business for another 1½ years, when Mr. Mondeng sold out to John Doll, the father. From that time on the business has been steadily increasing, being doubled nearly every year in sales. They have continuously added machines and floor space, and even this year their increase is larger than ever. In 1903 they occupied a space in a basement of 2500 square feet. They now occupy three floors, amounting to 15,000 square feet of floor space. Their warehouses at home and at Buffalo have a floor space of 3000 square feet, and the factory at Buffalo 6800 square feet. This makes a total floor space, not including their lumber sheds, of 24,800 square feet.

At the Minneapolis factory are only manufactured goods made of pine lumber, such as hives, frames, etc. The capacity here is about 200 hives per day, besides, of course, manufacturing several other articles. All shipping is done from Minneapolis, as they find they can serve their customers a great deal better and quicker at Minneapolis than in a smaller town.

Their factory at Buffalo really ought to be called a mill. This is where they saw veneer logs for whatever purpose intended. All sections, shipping-cases, pattern slats—in fact, everything made of basswood is sawed and manufactured there, and sent in a finished state to Minneapolis, ready to be re-shipped or re-packed with other goods. On account of having their own veneer mill, they have been able to produce a superior shipping-case. It was four years ago they first put out a veneer shipping-case, and since then it has grown in favor nearly all over the country.

They also manufacture berry boxes and crates. These are sold only in the flat, and mostly to large buyers, such as will take car-load lots, because the freight on this class of stock makes too much difference in the price. They have about 4 acres of ground at Buffalo, with a railroad spur running through the full length of it, enabling them to load cars at the factory door, or in the yard or warehouse, wherever the stock may be that they wish to load.

Last season they had a great many more orders than they could fill. They are making preparations now so they can take care of their increasing business.

Two years ago they incorporated under the laws of Minnesota for a capital of $50,000, of which only $30,000 has been issued. Business at the present time is not very rushing, but the prospects are for a good year.

The Dolls are an energetic firm, and mean to get their share of the bee-supply trade. They certainly are hustlers for business, and know how to do things.

Next we went to Augusta, Wis., where the Gus Dittmer Co. make such quantities of their well-known comb foundation. "Gus" is a genius. He invented his own process and made all his equipment (except the usual roller machines) without ever having seen any one else make comb foundation. They had the greatest season's business in their history, having handled over 50,000 pounds of their foundation.

Little Horace Dittmer.

Mr. Fred Dittmer, the oldest son of Gus Dittmer, is rapidly getting hold of the whole comb foundation business of the firm, so that his father can stay at home and play with Baby Horace, whom his grandpa and all the rest of the family consider just about "the whole thing." And he is a dear little fellow, as will be seen by his picture herewith.

Our next stop was at Marshfield, Wis., where we called on the Marshfield Mfg. Co. They, too, had the most rushing season in 1909 that they ever had, according to Mr. George Donhard, who has charge of the office work, and who very cordially entertained us during the afternoon. We regretted not being able to see either Mr. Hafer or Mr. Kalsched, the members of the firm. Mr. Hafer is now residing in Milwaukee, having retired from active business about two years ago. So Mr. Kalsched, who is a nephew of Mr. Hafer, manages the factory, and, with the assistance of Mr. Donhard, handles their large business. They have installed several new machines and will be in a better position to take care of their increasing trade next season. They expected to start the factory with the full crew Oct. 18, manufacturing sections and hives to fill their warehouse, so as to be ready for whatever the demand is another season.

Awards at the Illinois State Fair

The Illinois annual Fair was held Oct. 1 to 9, 1909. The premiums awarded were as follows, Messrs. Becker and Coppin having the only two exhibits of comb honey:

1st to Aaron Coppin and wife, Wenona, Ill., 2d to C. Becker, Pleasant Plains, Ill.

Collection of white honey, 12 lbs.—1st to Coppin, 2d to Becker.

Collection of amber honey or dark honey 12 lbs.—1st to Becker, 2d to Coppin.

Case of white clover comb honey—1st to Coppin, 2d to Becker.

Case of sweet clover comb honey—1st to Becker, 2d to Coppin.

Case of basswood comb honey—1st to Coppin, 2d to Becker, 3d to Jas. A. Stone & Son, Springfield, Ill.

Case of amber comb honey—1st to Becker, 2d to Coppin.

Display of samples of extracted honey—1st to Becker, 2d to Stone, 3d to Coppin.

Display of extracted honey—1st to Geo. M. Rumler, Mohawk, Ind., 2d to Becker, 3d to Stone.

Honey extracting on the grounds—1st to Coppin, 2d to Stone, 3d to Becker.

Frame of comb honey for extracting—1st to Coppin, 2d to Becker, 3d to Stone.

Candied honey—1st to Becker, 2d to Stone, 3d to Coppin.

Display of beeswax 1st to Coppin, 2d to Becker, 3d to Stone.

Dark Italian bees—1st to Louis Werner, Edwardsville, Ill.; 2d to Becker; 3d to Coppin.

Golden Italian bees—1st to Louis Werner, 2d to Becker, 3d to Coppin.

Carniolan bees—1st to Coppin, 2d to Becker, 3d to Werner.

Honey-vinegar—½ gallon and recipe for making—1st to Becker, 2d to Coppin, 3d to Stone.

Designs in honey—1st to Coppin, 2d to Werner, 3d to Becker.

Designs in beeswax—1st to Stone, 2d to Becker, 3d to Coppin.

For manipulating a colony of bees in cage —1st to Werner.

The National Election of Officers

The following notice was mailed to members of the National Bee-Keepers' Association by General Manager France, last month:

Brother Bee-Keeper:—August 12, 1909, I sent each member of the Association, Information Bulletin No. 12 and a nomination postal card. Only 420 cards were returned to me to be counted Sept. 30. Several hundred members wrote me they were not posted and did not vote, or ask me whom to vote for. I cannot advise in this case. Result of nominations received, gave each of present officers a large majority of votes cast, as follows:

President Geo. E. Hilton, Fremont, Mich., Vice-President George W. York, Chicago, Ill.; Secretary E. M. Hunt, Lansing, Mich.; General Manager N. E. France, Platteville, Wis.; Director C. A. Hatch, Richland Center, Wis.; Director F. Wilcox, Mauston, Wis.; and Director M. H. Mendleson, Ventura, Calif.

At the annual convention, Sept. 22 and 23, 1909, at Sioux City, Iowa, after the President's Address, the following was unanimously adopted:

"Whereas, The present method of nominating officers for the annual election of the National Bee-Keepers' Association seems inadequate; be it

"*Resolved*, That a committee of as many members as there are States represented at the National Convention be appointed to select and report the names of two candidates for each office in addition to the nominations obtained in the usual way."

This Committee from 11 States reported nominations as follows:

For President—George W. York, Chicago, Ill., and Thomas Chantry, Price, Utah.

For Vice-President—W. D. Wright, Altamont, N. Y., and G. M. Bently, Knoxville, Tenn.

For Secretary—Morley Pettit, Jordan Station, Ont., Can., and Louis H. Scholl, New Braunfels, Tex.

General Manager and Treasurer—N. E. France, Platteville, Wis.

For the 3 Directors—J. E. Crane, Middlebury, Vt.; J. J. Wilder, Cordele, Ga.; R. A. Morgan, Vermillion, S. Dak.; Edwin G. Brown, Sergeant Bluff, Iowa; B. A. Hadsell, Buckeye, Ariz.; and E. F. Atwater, Meridian, Idaho.

From the above nominations for each office, please select your choice, and mail enclosed postal so as to reach Chairman R. L. Taylor before Nov. 30, 1909, the day all the postal ballots will be counted.

The Annual Report is now in the printers' hands, and will be out soon.

Very truly yours,
N. E. France.

There are, of course, many of our subscribers who are not members of the National, and thus cannot vote. If so, why not send the dollar dues *at once* to the General Manager, N. E. France, Platteville, Wis., with your selections from the above nominations for officers? We feel that every live bee-keeper in America should be a member of the National Bee-Keepers' Association. It is the largest and best organization of bee-keepers on this continent, and so deserves the support of all beedom.

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Loss of Honey from Smoke?

Reidenbach, in a lecture, is reported to have said (Prakt. Weg.) that according to observations of Americans there had been a loss of 25 percent of the honey from using too much smoke. That statement is a little vague. Does it mean a fourth of the season's crop, or a fourth of the intake of a day or an hour? In any case, what Americans have given any definite data on the subject? Don't all speak at once.

Apiaries of Andrew Joplin.
1.—Fox Apiary. 2.—Hot Springs Apiary. 3.—Mr. J. with Swarm.

Apiaries of Andrew Joplin

I send herewith some views of Mr. Andrew Joplin's apiaries. No. 1 is a view of his "Fox Apiary," near El Toro, with himself leaning on a hive. No. 2 is a view of his "Hot Springs Apiary," near San Juan Capastrano. No. 3 is Mr. Joplin himself with a swarm of bees in his hand.

Apiary of George Hodges, of Belmont, N. Y.—Past 81 years of age.

The honey season was very good in this locality this year.

I get lots of useful information from the American Bee Journal.

El Toro, Calif. T. O. Sharp.

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Comb Honey Without Separators

W. K. Morrison says, in the Bee-Keepers' Review, this can be made an entire success. Many of the veterans will shake their heads and say they *know* better. But before judging too hastily it may be well to consider the conditions necessary for success. The most important item is the width, or rather, the narrowness of the sections. Mr. Morrison says they must be only 1¼ inches, making the comb 1 inch thick. These, with full sheets of foundation well fastened, and hives perfectly level in all directions, are the principal requirements. Editor Hutchinson adds:

> I have produced thousands of pounds of comb honey without separators, and this honey has been sold at the highest market price, and secured first prizes time and again at fairs in competition with separatored honey. I used 7-to-the-foot sections, also those only 1½ inches in width, and I think the latter are narrow enough. There are some additional advantages in the use of these narrow sections. The honey is ripened and sealed over more quickly, allowing the super to come off sooner and be replaced with another; and retail dealers prefer these thinner combs.

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George Belmont and Apiary

I am sending a picture of one of the oldest bee-keepers in this country—Mr. George Hodges, of Belmont, N. Y., who has taken the American Bee Journal for years.

George Hodges was born 81 years ago, a few miles from London, England. He came to this country while a young man, and, through industrious habits, succeeded in paying for the home in which he now lives. His wife died about 2 years ago, since which time he has been keeping house alone. He has been engaged in bee-keeping for many years, and is very successful. His products are eagerly sought for on account of the fineness of quality. Mr. Hodges finds his dearest pleasure out among his bees, even yet, and in spite of rheumatic lameness.

Bradford, Pa. Chas. H. Munson.

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Swarming Prevented—A Booklet

On another page the reader will find an advertisement on prevention of swarming, calling attention to a pamphlet issued by Dr. H. Jones, of Preston, Minn., who describes his method of treatment for such prevention. The price of the booklet has been reduced from $1.00 to 25 cents. We hope our subscribers will send 25 cents at once to Dr. Jones, and study the booklet thoroughly during the coming winter, so that they will be able to put its suggestions into practise another bee-season. Dr. Jones expects to be at the next meeting of the Chicago-Northwestern Bee-Keepers' Association, Dec. 1 and 2.

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Your Magazine Subscriptions

On another page will be found our clubbing-list in which we include many of the best agricultural and family magazines and publications for which we have arranged to receive orders.

We trust that our readers will examine the list and select from it such as they wish to subscribe for, and send their orders to the office of the American Bee Journal. We feel that we can save our readers some money in thus ordering for them their literature for the year. Now is the time to make up your list. If there are any publications that you would like, and that are not mentioned in our clubbing-list, kindly let us know and we will quote you prices. By sending your orders to us it will be mutually helpful. We are sure that our readers will be glad to help the American Bee Journal, and we wish you to know that we will be only too glad to do what we can to help you. Be sure to examine the clubbing-list on another page before ordering your family literature.

Non-Swarming in Scotland

Speaking of this matter in the British Bee Journal, D. M. Macdonald says:

> Take the three points Mr. Dadant emphasizes—large hives, production of extracted honey, and house-apiaries. None of these are in use here, yet swarming does not exceed 2 to 5 percent.

And then, like the exasperating Scotchman that he is, he stops short, without a word of explanation as to how it is that with small hives, and working for comb honey, he gets along with as little swarming as the Dadants with their large hives and extracted honey. Please tell us, Mr. Macdonald, is it the strain of bees, the management, or what?

The
ALFALFA
APIARY

Exhibit of George H. Coulson,
At the Oklahoma State Fair, where he won 1st Premium on Golden Italians.

Bees and Alcohol

Replying to a question, the British Bee Journal says:

> "Bees are very sensible to disagreeable odors, and that of alcohol is particularly obnoxious to them, consequently those taking it are more liable to be severely stung than abstainers?"

It is true that bees are "very sensible," not only to "disagreeable odors," but as to many other things. So far as strong drink concerns bees, they are pretty good prohibitionists. And doubtless the great majority of their keepers are like minded, particularly as to their personal habit, if not always so politically. The little bee teaches many a valuable lesson besides that of industry.

Biographs of Beedomites

Death of J. Q. Smith

Mr. John Q. Smith, for many years president of the Illinois State Bee-Keepers' Association, passed away Oct. 9, 1909. Death was due to heart trouble and complications which had continued for some years. A month or more since, Mr. Smith was compelled to give up the active life of merchant tailoring, bee-keeping, etc.

Mr. Smith was born April 14, 1846, in Berlin, Mahoning Co., Ohio. When 6 years old his parents moved overland in a covered wagon, and located on a farm in Darke Co., Ohio. Here he attended the district school for several years, and at the age of 15 learned tailoring in Greenville, Ohio, where he worked at his trade in 1864. He then enlisted in the 152d Ohio Volunteer Infantry. When the war closed in 1865, he went to Springfield, Ill. October 21, 1866, he married Miss Martha C. Busher of that city. They then went to Lincoln, Ill., where he resided until his death.

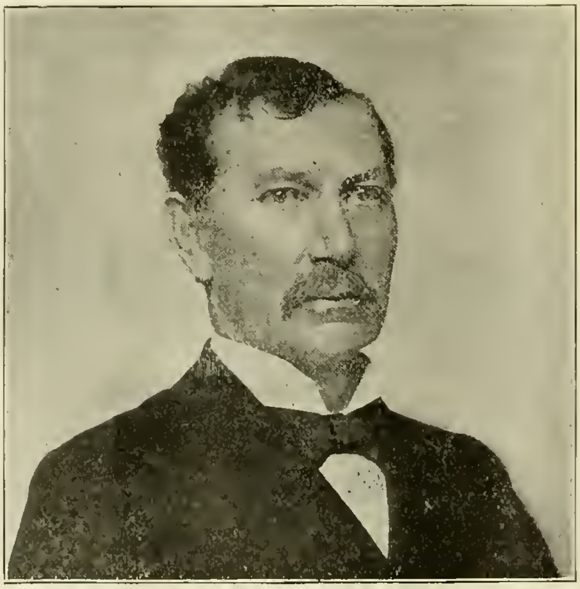
In 1874 he became interested in bees, trading a double-barreled shot-gun for 3 colonies, and procured a copy of "Langstroth on the Honey-Bee," and other bee-literature, in order to understand apiculture thoroughly. He soon had an apiary of 102 colonies, which he Italianized in 1882. During that year he found to his dismay that over 80 colonies were affected with foul brood, leaving only 17 living. He traced the trouble through queens he had purchased from a queen-breeder in Southern Illinois.

In 1885 he organized the Central Illinois Bee-Keepers' Association, under the charter of which he was president until 1892, when it united with the Illinois State Bee-Keepers' Association, of which he was president at the time of his death.

Mr. Smith was a member of the Methodist church, also identified with a number of fraternal societies, and held many responsible offices therein. He had three children—Oliver C., Claudie May, and Walter E. The first named, with his wife, lives in St. Charles, La. The only daughter died a number of years ago, and Walter E., with his wife, now lives in St. Louis, Mo.

About two years ago Mr. Smith was again married, his first wife having died some years before.

As noted before, Mr. Smith was interested in bees and bee-keeping for about 35 years, during which time he was also active in Association work among bee-keepers. He was also, during the past few years, bee-inspector for



The Late J. Q. Smith, of Lincoln, Ill.,
President of the Illinois State Bee-Keepers' Association.

Illinois, and did what he could to eradicate the dread disease of foul brood from the apiaries of the State.

He was a notable lover of nature, the wild wood and the prairies, and ever found a congenial field in the protection of wild game. He was a sportsman in every sense of the word, and when for years he was game warden, his labors were productive of much good. In his earlier days Mr. Smith was president of the Lincoln Gun Club, which had for one of its departments the protection of game and fish, and enforcement of the game laws.

In lodge circles Mr. Smith was equally prominent. He was one of the oldest members of Lodge 204 I. O. O. F. For many years he had been a member of the Masonic order, was identified with the Modern Woodmen, member of the G. A. R., and also of the Knights of Pythias.

Mr. Smith's funeral service was held at the First Methodist Episcopal Church at Lincoln, Rev. W. A. Smith officiating.

We had been personally acquainted with Mr. Smith for many years, and counted him one of our staunchest friends, as well as of the American Bee Journal, which he read regularly for over a quarter of a century. He attended a number of the meetings of the National Bee-Keepers' Association during recent years, the last one being, we believe, at San Antonio, Tex. He was also present at the last meeting of theChicago-Northwestern Bee-Keepers' Association here in Chicago about a year ago, and seldom missed a meeting of the Illinois State Bee-Keepers' Association, of which, as before mentioned, he was president for so many years.

Thus the ranks of beedom are being depleted one by one. Those who were active and prominent a quarter of a century ago and for some years thereafter, are rapidly joining the silent majority on the other side of the River.

The American Bee Journal desires to assure Mrs. Smith of its sympathy, and also that of the readers of the American Bee Journal, in her bereavement.

Since the foregoing was put in type, we have received the following from Jas. A. Stone, Secretary of the Illinois State Bee-Keepers' Association:

> It is with sad heart that I announce the death of our friend, Pres. J. Q. Smith. We have been associated with him since his first election to the office of president of the Illinois State Bee-Keepers' Association in 1893, and found him to be a man of quiet and cool decision, and lovable disposition.
>
> When the Illinois State Bee-Keepers' Association was organized, Feb. 26, 1891, at a meeting of the Capitol Bee-Keepers' Association (previous notice having been given), P. J. England, of Fancy Prairie, was elected its first president, who served till the second annual meeting that occurred in December of the same year (1891). He had been president of the Capitol Bee-Keepers' Association. Hon. J. M. Hambaugh, of Spring, Ill., was a charter member of the Association, and at once placed a Bill in the Legislature (where he was a member), and secured the first appropriation ($500) to publish our annual report.
>
> At the annual meeting, Dec. 16 and 17, 1891, Hon. J. M. Hambaugh was elected president for 1892, and was re-elected at the next meeting for the year 1893, during which year he had charge (the secretary with him) of the Illinois honey exhibit at the World's Fair at Chicago, which exhibit took the medal over all the other States. (The medal is now in the State Historical Library.)
>
> In the fall, Hon. J. M. Hambaugh moved to California, and J. Q. Smith, who had been 1st vice-president during 1893, was elected president, and was continued in that office from year to year till the day of his death. Of the three named presidents, all have passed to the Great Beyond, and 5 of the 15 charter members are also among the dead, namely: Hon. J. M. Hambaugh, Chas. Dadant, P. J. England, Geo. F. Robbins, and Hon. J. S. Lyman. Those still living are: Col. Chas. F. Mills, C. P. Dadant, A. N. Draper, S. N. Black, Aaron Coppin, J. W. Yocom, Thos. S. Wallace, A. J. England, C. E. Yocom, and Jas. A. Stone.
>
> The first honorary member was Thomas G. Newman (at that time editor of the American Bee Journal), who is also dead.
>
> In contrast with the charter membership of 15, we have a list of members for 1909 of 256.
>
> Jas. A. Stone, *Sec.*

The following appeared in the Daily News-Herald, of Lincoln, Ill., Oct. 11, 1909:

> JOHN QUINCY SMITH.
>
> Despite the overcast skies and threatening weather, a large number of friends crowded the First Methodist Episcopal church Monday afternoon at 2:30 o'clock to pay their last respects to the memory of John Q. Smith, whose death occurred Saturday morning, Oct. 9, 1909, following a long illness. The remains were accompanied to the church from the late residence, 218 Clinton street, where they were taken Monday morning, by the members of the Grand Army of the Republic, Odd Fellows and Lincoln fire department. The funeral sermon was delivered by Dr. W. A. Smith, pastor of the church of which the deceased was a member. Music was furnished by a quartet composed of Misses Lyda Parks and Hester Cameron, Wilbur J. and Frank Gullett.
>
> Beautiful floral tributes were sent by relatives and friends and by the Masons, Odd Fellows, Knights of Pythias and Woodmen, with which Mr. Smith was affiliated in life, while the casket was draped in the flag which he followed during the war.
>
> The interment was in Union cemetery, where the burial services of the Odd Fellows were conducted.
>
> The acting pall-bearers were from Lincoln Lodge of Odd Fellows, and were Lester Acton, Charles Anton, T. P. Rigdon, L. E. Steele, Martin Denger and Uriah Hill. The honorary pall-bearers were from the Grand Army of the Republic, and were W. C. McMasters, John Gordon, A. T. Hayes, R. H Kinman, Edward Fagan and Levi Forbis.
>
> Among those attending the funeral from out of the city were C. Becker, of Pleasant Plains, treasurer, and Jas. A. Stone, of Springfield, secretary, of the Illinois Bee-Keepers' Association, of which Mr. Smith was president for 15 years.

Our
Bee-Keeping
Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Various Uses of Honey

An able article on the "Uses of Honey," by D. M. Macdonald, the well known Scotch writer, appears in the Irish Bee Journal. One paragraph reads:

> Used instead of salt, it *preserves meat.* I should like that some readers would test this and inform us of results. I am not certain how it should be applied, or how much should be used, but I have read somewhere that the results are good. It can also be tried as a substitute for *curing butter.* It does its duty well, and keeps the butter fresh and sweet for a long time, if it is cleanly handled and carefully sealed up until it is required for use.

That is tantalizingly vague. In this country the cheaper grades of honey are used (are they not?) in the preparation of sugar-cured hams—hardly, however, as a substitute for salt, but in connection with it. Does Mr. Macdonald mean that honey is also used to keep meat in its fresh state, without being salted? The same question might be asked about the use of honey in butter. In this locality honey has been used to some extent mixed with butter, all the way from an ounce of honey to a pound of butter up to equal parts of honey and butter. It is not difficult to mix the two by warming them a little. Most people would probably accept butter with an ounce of honey to the pound as an unusually good article of butter, while many would think the half-and-half article a very convenient "spread." Another paragraph reads:

> To sweeten tea and coffee, honey is better than sugar, and many who cannot use the latter might well use honey in its place, as it has no ill effect on the digestive organs. Many honey cookies, biscuits, jumbles, cakes and drops can be made delightful in taste, and several books supply various recipes for their making.

Very good, so far as it goes; but why, oh why does Mr. Macdonald omit to mention the very important fact that honey makes a very great difference in the keeping qualities of any article of cookery when used in place of sugar? Use sugar in making a batch of cookies, and they are at their best when fresh baked. When a week old they will hardly do to place before company, and if kept much beyond that time they are likely to find their way into the chicken-feed. On the other hand, a honey cooky is just as good when 3 weeks old as it is the day after it is baked, perhaps better; and just how many weeks or months it would keep good has never been discovered here—there is too good a market for honey-cookies. One important advantage of this—to say nothing of the fact that most people count a honey-cooky more toothsome than a sugar-cooky—is that a large batch of honey-cookies can be made at a time, while it is not wise to make at one time more sugar-cookies than will be used up in a very few days.

Mr. Macdonald has much to answer for that he made no mention of this important matter. It is to be hoped that he will make proper apologies to the bee-keeping sisters of Scotland and Ireland.

The Fig-Wasp Like the Honey-Bee

The following clipping was sent by that bright sister of the bee-keeping family, Mrs. Mary E. Null. While not directly connected with bee-keeping, it strikingly illustrates the fact that success in the growth of an important crop may depend greatly upon the work of tiny members of the insect world. However important the work of this wasp may be, it is nothing compared with what the honey-bee is quietly doing year after year, in most cases getting no credit whatever for its indispensable aid in securing crops that mount up into the millions. If all the bees in the country were suddenly wiped out, the Department of Agriculture would no doubt promptly get busy scouring the world to get bees to stock the country, not so much for their honey as for their still greater value in fertilizing the flowers. Here is the clipping referred to:

> HAS SOLVED THE FIG PROBLEM.
>
> The United States Department of Agriculture has solved the question of growing the Smyrna fig in Fresno Co., Calif., in the heart of the San Joaquin valley, one of the biggest and most prosperous irrigation districts of California. This was accomplished by importing a pecular kind of wasp, which fructifies the figs from Smyrna.
>
> George C. Roeding, one of the early settlers of the San Joaquin valley, began experimenting with the Asiatic fig some time ago, but the fruit failed to mature. After much study it was found that the insects were a necessary factor. The Government sent an expert to Asia who brought back a number of little caprifigs containing the insects. The bugs were placed on the caprifig trees in the Roeding orchard, and carefully protected during the winter. With the coming of spring many colonies of the wasps appeared, and the crop of Smyrna figs has since been a big success.

A Sister's Report and Her Stung Dog

DEAR MISS WILSON:—With 5 colonies I got in all about 140 pounds of extracted honey, and 25 pounds of comb honey. The wet, cold spring was very hard on the bees. The long drouth last year seemed to kill many of the roots, and from what roots were left the cold weather last spring made a yield almost impossible. Then as soon as the white clover was gone the weather turned hot almost immediately and spoiled the sweet clover around here. My first honey is basswood and honey locust. The last I am not sure about. It seems to be several kinds, but fair honey at that.

I have been feeding my bees this fall. I have fed them 21 pounds each of syrup that is half buckwheat honey. I had several gallons of buckwheat honey last fall and we did not care for it. But I find it just the thing to feed with.

The weather has turned so suddenly cold and wet this week. Only for that I should have had the cushions on by now. But I will have to put them on very soon.

Did any one ever raise a puppy and keep bees at the same time? Well, I had another experience since the bees stung me and my eye was swollen shut. We got a 4-weeks-old fox-terrier pup about July 10. "Bob" was possessed to see what we kept in those "little koops." He tried to catch the bees, and being fearful of having him badly stung, we had to watch him pretty closely. About Aug. 20, I was working with the bees one morning and sent him to the house. After I got through "Mr. Bob" goes out to tend the bees all unbeknown to us. We missed him and looked to find him, but no Bob was to be seen. Just then the door-bell rang, and I went to answer the bell, and some boys had come to ask if I knew my dog was dead. There lay Bob apparently dead. His head and body were swollen to twice the size. I put my hand on him and spoke to him, but he never moved a muscle. Then I turned him over and I could see he was terribly sick. I picked him up and carried him into the house. I found a stinger on his very eye-lid. I took it out and looked to see if there were any more, but could not find any. We came to the conclusion that he swallowed a bee and it stung him in his stomach. He was pretty quiet that day, but he was all right in a few days. But it cured Bob of bee-keeping.

ELSIE A. CUTTER.

Grand Rapids, Mich., Oct. 16.

Bees and Pollen

Painstaking observers are not lacking among the bee-keeping sisters of England. In the British Bee Journal Annie D. Betts says:

> During the last two summers I have made a practice of going down to the hives and collecting samples of pollen from the pollen-baskets of home-coming bees. I use a small camel's-hair paint-brush, moistened between the lips, with which it is easy to remove from the bee's legs, as she runs up the alighting-board, any "load" of pollen one may wish to examine. The lumps of pollen so obtained are then placed on a clean glass slip, care being taken to keep them separate, and also to wipe the brush carefully on a clean cloth after each capture; so that each "load" of pollen remains as it was collected by the bee; and, if it be found to contain two or more kinds of pollen, we may infer that the bee has visited two or more kinds of flower during that journey.
>
> I have so far collected samples of pollen in this way on some 70 days; and on 18 of these have come across at least one mixed "load" of pollen. That is, on rather more than one day out of four, mixtures have been observed. Of course the percentage of mixed to pure "loads" of pollen brought in by the bees is very much smaller than this.

Some cases of working on different kinds of flowers on the same trip have been reported heretofore (in this locality bees have been seen going from one kind to another), but generally it has been supposed that this was in a time of scarcity. Our British sister, however, reports that she has found in the same load pollen from heather and from dwarf gorse, both kinds being plentiful at the time. All of this, however, must still be considered exceptional, the rule being that the bee works on only one kind of flower upon the same journey, and likely the same rule holds good for the day and for successive days.

Southern
Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

Production of Chunk or Canned Comb Honey

Comb honey cut out of the frames in which it is produced and known as "chunk" or "bulk comb" honey, is not a new thing. The world at large has no idea of the large quantities of this kind of honey that has been produced in the great State of Texas alone, amounting to millions upon millions of pounds since it was first introduced to replace comb honey in sections. And this latter it has not only done almost entirely, but more than that, it has increased the demand for honey to a greater extent than could ever have been accomplished with section comb honey in three times the length of time.

Bulk comb honey became popular from the very start, and the demand for it has been on a steady increase. Bulk comb honey has found its way into more homes than section honey would ever have done, which was inducive toward spreading the good news about the value and the healthfulness of honey as a food.

Bulk comb honey has found a place on tables where section honey would never have gone, especially on the tables in the homes of the less well to do classes of people. In this it has not only been an encouragement to the producer but a blessing to those who could have comb honey on their tables but could not afford section honey.

Right here will be a loop-hole for the opponets, who object to this product, to make their arguments, as we have often heard them say, "Let the poor people use extracted honey if they cannot pay for section honey." Since I can speak from experience, and am one of those who likes to enjoy such "luxuries" as comb honey occasionally, I wish to put my foot down flat on any such arguments at the very start. If I like comb honey I do not want to be forced to eat extracted honey just because I cannot afford the comb honey. Perhaps I do not care for extracted honey at all, but the price of section honey is entirely out of my reach on account of the price. Perhaps I have been brought up on an occasional "feed of honey as it came from the box-hive or the bee-tree" even, after which a taste for that "rich" comb honey of by-gone days has left a taste for "just one bit of such honey as we used to have;" which was not so very different from the fine, "rich," bulk comb honey of today. Would section honey ever take the place of this? Or would the arrangement of extracted honey appeal to me? No! Neither of these is what is wanted. What's the result? The increase in the demand for honey is slow, the price is dull, and the bee-keeper generally feels dull about it.

Put bulk comb honey in the place of the above, and you fill the bill. Now there are just thousands of those "bills" to fill. That's what we have been doing here in Texas. It can be done in other States. Neither will it only help to increase the demand for more honey, but it will make bee-keeping more profitable. My own experience of nearly 20 years has proven that beyond a doubt; it has been profitable to me, and *why* should it not be so with you? That is the question.

Bee-Stings for Rheumatism

Since writing my article on the above subject, on page 236, the following letters have been received. I gladly place them before the readers for several reasons. The first is, because they may help to draw out further information on this subject, from the bee-keepers, as to whether bee-stings are or are not a "cure" for rheumatism; and, second, such information may be of enough value to settle this widely spread question, "bee-stings for rheumatism."

Bee-Stings for Rheumatism.

Of all the words in the English language which have been butchered to make the Romans howl a day, "cure" is the worst. The newly fledged doctor, the patent medicine fakir, the faith-curist, all "cure," by claim, when the old, experienced medical man smiles sadly, knowing that there are but four diseases for which we have remedies which come anywhere near meeting the demands of the word "cure," to make well; to banish disease.

Had our big Tehana brother, Scholl, practiced medicine for a matter of 30 years, as has the writer, he would hestitate to claim a cure for any kind of human ill, big or little, and pause at rheumatism longer than any of the rest.

Bee-stings never "cured" rheumatism, Mr. Scholl. I know this is an impolite view of your positive statement that "a cure was made in every case." I, and others, have failed utterly to relieve the symptoms of uric acid poisoning by the aid of bee-stings, consequently you saw cases that had had other treatment before the patient was stung. This is a guess, based on the knowledge that a rheumatic patient will begin at once taking anything and everything recommended from doctor's stuff to bee-stings, and while I shall not deny that the symptoms alluded to abated at once after the bee did her work, it is no proof that the sting caused the relief.

Neither does your own experience apply, for rheumatism is more often than not a self-limited disease; it will "get well" with astonishing frequency without treatment. Perhaps you had a cold spell just before going to work with the bees, and felt the trouble, and getting out-of-doors in the sunshine caused the system to throw off the uric acid so that you "got well."

Were this bee-sting cure a new theory I should not wonder that it attracted attention, but I have heard of it since childhood. Think you, Mr. Scholl, that the human race would still be suffering, and the doctors looking for a remedy, if bee-stings cured? No, sir! the disease would be banished *poco pronto*, for the treatment is available all the time

I have spells of muscular rheumatism—though there is really and truly no difference in the disease, only in the severity of the manifestations, which come on regardless of bee-stings. Part of the time last spring the weather was cold and damp, and I suffered severely, notwithstanding I was stung many times daily, for I am nervous and careless with my bees, and I suffered until the weather turned warm, when the trouble left in an hour, but the next cold, wet spell developed the symptoms again.

I believe a sudden and severe stinging might develop a case of rheumatism, for a *shock* of any kind *will*. If you do not know the etiology of the disease you may be pleased to know that large quantities of urea are thrown into the circulation daily and hourly. Much of this is converted into uric acid *which is always present in the blood*, but is always being carried off. If from some cause the kidneys fail to eliminate the compound it *remains suspended in the blood until some sudden shock to the nervous system causes it to crystallize out in the form of millions of small needles, which pricking the tender nerves cause* muscular rheumatism in the large muscles; lumbago in the small of the back, but is generally believed to be kidney trouble by the laity; sciatica, where the big nerve of the leg is involved; pleuradynia if the muscles of the chest suffer; neuralgia if the nerves of the face are involved. If a man lived in a constant temperature of 70 degrees, and where the moisture was as lacking as in Llano Estacado, with never a care to move his mind, his blood might be saturated with uric acid enough to kill him (inflammatory rheumatism) if suddenly crystallized, and the sting of a bee would be enough to do it, or as he sat eating a dinner the receipt of a letter bringing bad news would suffice.

Like yourself, Mr. Scholl, I have been deceived by superficial examination. In my first year of practice the healing of disease was an open book to me, and I pitied the older men who lost patients. Now—well, do not ask me to confess to an amount of ignorance which is appalling.

Of course, *I* do not object that you believe that bee-stings will cure rheumatism, not at all, but I do ask that if we are both alive 3 years from now that you report your failures. In the meantime, I shall much more greatly enjoy your bee-talks. I like them.

Buck Grove, Iowa. (Dr.) A. F. Bonney.

Bee-Stings for Rheumatism.

On page 236 in the July number of the American Bee Journal, some one wrote that bee-stings will cure rheumatism. I will give my experience.

I am a man of 70 years, and I have been in the bee-business for 60 years, and my father was a bee-man before me. My father was often laid up with rheumatism, and he credited the cause altogether to bee-stings. He never used veil nor gloves nor smoker, and he used to get stung pretty badly, and the doctor told him the cause of his rheumatism was the bee-stings; and that he would have to go out of the bee-business to get rid of the rheumatism. He never went out of the bee-business and he never got rid of the rheumatism.

I have had the rheumatism for over 40 years, and I have it badly now—not much of the time without pain. About a month ago I was stung 12 or 14 times on my face, neck, and hands, and in the evening I had so much pain with rheumatism that I had to call in the doctor, and my feet were swelling up with rheumatism. I told the doctor that I got stung pretty badly that day with the bees, and that I had read in several of the bee-papers that bee-stings were a sure cure for rheumatism. The doctor said that he had read the same thing in some paper, but it was all "bosh." He said he never knew of a case of rheumatism to be cured by bee-stings. I have traveled over the country a good deal in my time, and I have yet to find the first man who was cured of rheumatism by the sting of bees.

I met an old farmer when I was selling honey in Akron, Ohio. He stopped me on the street and told his experience with bees. He said that he once got stung so badly that he had two doctors there, and the two doctors worked with him for two hours to save his life, and then he decided to go out of the bee-business, and out he went. He gave some of his colonies away and some he sold cheap. And he told me that he had had rheumatism for 15 years, and he still had it. I have never seen him since. I am sure he was telling the truth, for when he walked away he walked very lame.

If bee-stings would cure rheumatism, I would go out and tell the people what bee-stings would do, and insist on their trying it. Some of the greatest doctors say rheumatism cannot be cured, and I believe it, for I have had to walk with crutches many days because of rheumatism. One time I was stung 12 times on my throat. In 5 minutes my limbs got spotted. The doctor told me that he had no medicine that would stop it or even help me. It went over me so quickly. About that time I began to get pretty sick. I told the doctor to give me a half-pint of whisky, and he did so. He said that might help me. I drank the whisky, and in half an hour the spots on my limbs all disappeared, and I went to work again. I am a temperance man, but I never will be without a little whisky in my house. Whisky is a sure cure for severe bee-stings.

Seville, Ohio. M. D. Tyler.

In spite of the able experience of one, as Dr. Bonney seems to be able to give, I cannot help believing that the effect of *bee-sting poison in a person's system* will at least relieve, if not even cure, rheumatism. Dr. Bonney does not even mention this part of the subject in his letter, confining all of his arguments to the sting of the bee. In this we would have to agree with him to a certain extent, if we consider the effect of the shocks, crystallization, etc., mentioned by him, that might be caused when a person is stung by a bee. He does not refer, however, to the effect that the poison of these stings may have upon the ailment *after it becomes incorporated in the system*.

It would also be well to bear in mind that these shocks would not always be the same, not only in different persons, but also in one and the same individual. While they may be more severe to one person, they are not to another, and although the first stings may be quite severe, the patient may soon become used to these shocks so that the shocks would have no longer any effect upon the rheumatism. This, then, brings us to a point when we can let the question of the effect of the shock upon rheumatism, as spoken of by Dr. Bonney, drop altogether.

We now come to the question as to the effect the bee-sting poison can have upon the ailment of rheumatism, if it is once in the system of the afflicted person. My own experience of nearly 20 years, during which time I have been stung numberless times, shows that my system has been "toughened" to such an extent that it seems to me that it would be easier for me to ward off trouble such as rheumatism, etc., and I lay this to the fact that there is always more or less of the bee-sting poison in my system, injected into it by the bees that stung me.

Now, we would like to know more about this matter, and hope to hear from others. If bee-stings are not good for rheumatism we want to know it.

Referring to the other letter, our correspondent cites that some of our greatest doctors say rheumatism cannot be cured, but I believe that a time will come when it *can* be cured as well as other once incurable diseases, for which "science" has found a remedy. It is "Nature" that has given us the rheumatism, and I believe that for every ill or disease Nature has some remedy by which they can be "cured." This is but natural, and rheumatism will find its remedy, whether it is bee-stings or something else. I would not indulge too much in that whisky cure, however.

She Overheard It

"Did it sting you, Aunt Jane?" asked the precocious child of the rich but cranky old relative of whom the family had expectations.

"Did what sting me, child?" asked the old lady, irascibly.

"The bee pa says you've got in your bonnet."

Contributed Articles

Preparing Bees for Winter

BY G. M. DOOLITTLE.

A correspondent wishes me to tell him how to prepare his 27 colonies in single-walled hives so that they will be liable to go through the winter in good shape.

The first requisite is to know that all are well supplied with bees, stores, and a good queen. The last is not entirely essential, for he can see that the queens are good ones in the spring. However, my experience says that colonies having good queens winter better, on an average, than those with poor queens, or none at all. Then he does not tell where he wishes to winter his bees, whether on the summer stands or in the cellar, and in order to be sure to cover the case in either event, I will say a few words regarding each way of wintering, and the preperation for the same.

Now, for outdoor wintering there is nothing better than chaff hives, but as our correspondent tells us that his bees are in single-walled hives, we must plan for fixing them the best we can for wintering with the hives they are in, which is to go to the store and procure some dry goods boxes or others, or make such boxes of suitable size in which the hive can be put and leave room all around it for the packing. The packing may be of chaff, dry sawdust, fine hay or straw, or dry leaves. A space of about 3 inches is the right amount to leave, for experience has proven that this is better than a larger or smaller amount. Then the bottom-board should be raised that distance above the bottom of the box, and after having packed under it, it should be secured there and so as to touch the front side of the box also, as the bees must pass over this to get outside of the hive and box whenever days occur in which they can fly. One-half inch above the bottom-board a thinner board of the right width should be secured by resting on cleats or otherwise to both the hive and the box, immediately above the entrance to the hive, so as to keep the packing material from obstructing the passage of the bees, for this is now to become the entrance to the hive from the outside of the box.

Having this fixed and the hive thoroughly secured to its place, we now put in the packing, pressing it in lightly so that as even a temperature as possible can be maintained inside of the hive, packing the material in as nearly alike on all sides as possible. When the top of the hive has been reached all around the passage-ways which led to the sections should be opened, and two or three thicknesses of cotton cloth spread over these so as to keep the packing from rattling down into the hive, and also so that in thus providing for ventilation a direct draft shall not be allowed through the hive. If no honey-board is used, so that the tops of the frames are exposed, then spread the cotton cloth over the whole top of the hive, after laying three or four ⅜-inch square sticks across the frames so that the bees can pass over the tops of the frames to get honey at the sides of the hive, if need be, by going along the sides of these sticks under the cloth.

Having the top fixed and the cloth on, fill in the packing to the depth of 3 inches all over the top of the other packing as well as over the hive, keeping it as evenly distributed as possible, leaving this loose and open without pressing down at all. The box should be tall enough so as to come an inch above the packing, so that the cover, which is now to be put on, shall not touch it. This is important, for where the packing touches the cover of the box it will absorb the moisture which condenses on the cover to such an extent that all will become wet and moldy, much to the detriment of the colony, and often to the entire loss of the same.

But if our correspondent can put his bees in a suitable cellar during the winter, I should advise him to do this rather than using the above, for with a good cellar there will be a great saving in honey, as well as better chances for successful wintering. A cellar with a variable temperature will not be as good for the bees as would one in which the temperature could be kept as nearly at 45 degrees as possible, yet if the temperature does not go above 52, nor go lower than 35, it will winter bees much better than to leave them on the summer stands, especially if the hives are left unprotected, and the place is not farther south than 40 degrees north latitude.

If the cellar is more variable as to temperature than above, and we are south of latitude 40, then the bees would doubtless be better off outdoors packed as given for outdoor wintering.

To fix the hives properly for wintering in the cellar, they should be carefully carried in some morning when it is a little cooler outside than the temperature which is required for the bees to fly, and never when the hives are frozen down to the bottom-boards or the ground, if this can possibly be avoided. When the hives are thus frozen down, the jar and confusion which comes from prying them loose, results in great irritation to the bees, and causes them to consume so much honey that it often leads to unsuccessful wintering afterward.

Upon taking them to the cellar the hives should be set on some kind of a platform a foot or more off the cellar bottom, and the hives raised by some means at least 2 inches off the bottom-board or bench. Failing to do this, the hives will not be properly ventilated, and the result will be that the bees may become uneasy from lack of ventilation, which will cause them to consume more stores than is necessary to their existence, thereby needlessly using up the honey and often leading to disease and death. If it is not convenient thus to place them, the hive-entrances should be thrown open to their fullest capacity, and the bees looked after at least once a month to see that none become clogged. Still, the first is much to be preferred, inasmuch as in this case all the dead bees, uncappings to the combs and dirt of all kinds, fall entirely below and away from the combs, and thus all are clean and dry in the spring when put out.

I also believe that the cellar should be dark for the average person who winters bees in the cellar, or at least that part in which the bees are wintered. Some claim that bees will winter just as well in a light cellar as a dark one, which may possible be so, if all the conditions for successful wintering are present, but as such conditions are usually not all of them present in many if any cellars, it is always best to be on the safe side, hence the advice to have the cellar dark. If it is very inconvenient to darken the cellar, or the part where the bees are, then matters can be materially helped by turning the entrances of the hives toward the wall, and within an inch or two of it, putting them in the darkest part of the cellar. At the out-apiary that is the way I have wintered my bees in the farmer's cellar for years, as he allowed them in there on the condition that he was to use his cellar the same as he had always done; or I could leave the bees out. With the entrances thus turned, I have fairly good success.

Borodino, N. Y.

Best Age of Queens—Comb Foundation in Sections

BY ALLEN LATHAM.

In the May and June numbers appeared an article from the pen of Mr. Ralph Benton. At that time I was moved to remonstrate against some of the teaching in that article, but time did not allow, and thus at this late hour I finally yield to that impulse.

But I would not for a moment have one think that I take exceptions to all of the article, nor of even a large percent of it. I can most heartily commend much of it. Early in his article Mr. Benton shows that he is a close observer by stating as one incentive to swarming "presence in the colony of a queen of a previous year's rearing." I presume that Mr. Benton means by previous year the year immediately preceding. I once made the old experts in a meeting of bee-keepers look askance when I expressed a like belief.

Again, Mr. Benton, on page 206—Division by Hive-Bodies—describes one of the neatest ways known of getting increase. This method is far superior to the ones most in vogue, and when the upper colony is allowed to capture most of the young bees of the older combs below, leaving only a very limited amount of old brood for the new colony, the old colony with its new brood-nest is in an ideal condition to store honey without acquiring the swarming impulse.

It is when Mr. Benton would have us requeen each spring as early as possible that I begin to take exceptions. I never yet have been able to prove the wisdom of that teaching, but have more than once seen the failure of it. Many a fine colony will, by that teaching, lose a queen which would assure a good crop, and have presented to it a queen of always untried quality, and frequently of poor quality.

This practice makes it impossible to select breeding queens with reference to honey-gathering qualities, the truly chief attribute of a breeding queen. When a colony has furnished us with a fine crop of honey, it will be of no use to breed from its queen because that crop of honey might never have been stored but for the field-force of daughters of the deposed queen.

Twice in my experience I have had a colony store 150 pounds of surplus comb honey—a large crop for the localities in which I have kept bees. In each case the colony was headed by a queen which was two years old, in her second full season. And it is my bounden belief that more queens are at their best in their second full season than in their first. I never have had a queen which was any good at all that was best in the season of her birth. Occasionally I have had queens which were excellent at a year old and turned poor before they were two years old. I hold, however, that properly bred queens will uniformly be best at two years of age.

Queens over a year old are not likely to swarm, are not inclined to lay so many drone-eggs as younger queens, and furnish colonies better equipped for comb-honey production. If any bee-keeper thinks otherwise than this I am inclined to believe that he has queens which are improperly reared or of a poor strain.

This matter of queen replacement the first months of her second year is one debatable, and facts may be furnished to support either side of the question. When, however, Mr. Benton makes the following statement there is no argument. He is surely in error. The statement is (page 207), "A super with full sheets of foundation in the sections—full sheets are always to be used in producing a fine grade of comb honey—never starters ——."

It is unquestionably true that more honey can be produced with full sheets than with starters—more sections to the colony. But it is not true that better honey can be produced, nor even better looking honey. Mr. Benton may say that with starters the bees may build more or less drone-comb, and that the larger cells are less pleasing to the eye than the smaller cell. This is a matter of fancy. In the mouth the larger cell will not suffer in comparison with the smaller.

Any one who has the slightest idea that as good honey cannot be produced with starters need only to try, to find out that he is in error. I produce honey both ways, and when I wish to treat a friend to my choicest honey I invariably select, when possible, a section which had only a starter in it. Even with the best of foundation the virgin comb surpasses the comb built on foundation. Many people can see practically no difference between clover honey and buckwheat honey other than one of color. The discriminating person will easily note the superiority of virgin comb honey over foundation honey. The fragile character of the comb is one of the first things such persons will speak of.

It may be stated that it is difficult to get well-finished sections when starters only are used. This is true if a person is inclined to give too much room to his bees. Let him crowd the work in the sections and he will not have this trouble.

Norwich Town, Conn.

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Swarming and Other Topics

BY ADRIAN GETAZ.

A few years ago I made some experiments on the swarming fever, or building queen-cells mania, or whatever it may be. The object was to verify a theory of my own concerning the causes of swarming. The facts turned out just as the theory indicated. The fever or mania kept increasing during about 5 or 6 weeks, and then disappeared in a short time. Never mind the theory just now. The fact remains that when the bees take a notion to build queen-cells, that notion keeps on increasing and developing into a real mania. During that time gathering honey and other such work is neglected. This is nothing new to most of the bee-keepers, nevertheless it might be repeated again, that cutting out queen-cells to prevent swarming is at best a very poor way of doing.

EMERGENCY CELLS.

The first two weeks, or perhaps three, during which I followed that process, nothing very uncommon developed. But after that I found that I had overlooked some queen-cells, or at least I thought so. Soon after a swarm came out and went to the woods between two visits. That puzzled me. The next time I found two queen-cells almost in the middle of a comb of sealed brood, and in such a conspicuous position that I could not have missed seeing them at the preceding visit. Then the truth dawned on me at last. I took away the cells and the hexagonal bottoms showed that notwithstanding the presence of a laying queen, the bees had started emergency queen-cells on what was, as far as I could ascertain by taking into consideration all the circumstances, larvæ about 3 days old.

What happened there to me must have occurred often to others. Many an apiarist has dwelt upon the fact that no matter how carefully he inspects the combs, some queen-cells may be overlooked. The probabilities are that in such cases it was with him as with me, the supposedly overlooked cells had been started on eggs or larvæ since the previous examination.

GOOD OR POOR QUEEN-CELLS.

If a queen is removed from a colony, this colony will build queen-cells over eggs or young larvæ, or if there are but few of these on larvæ even 3 days old. Most of them are small, and contain stunted queens. Sometimes, however, they are all, or nearly all, good. It is usually supposed that the small cells were started on old larvæ. That is so in some cases, but in experimenting along that line, I finally discovered that the reason why so many of them are small is because there is not enough room between them and the opposite comb to admit of their full development. The discovery was rather accidental. In one case of that sort I found quite a bunch of good, big queen-cells on a comb. That led me to investigate, and finally get the above-described result. If you want a queenless colony to rear a big lot of good queen-cells, give them a comb of eggs—they prefer the eggs; put it in the center of the brood-nest, push the adjacent combs sufficiently far away to give the necessary room, and the bees will do the rest.

BAIT-SECTIONS.

One of the chief difficulties in working for comb honey is to induce the bees to go into the supers. Very often instead of doing it they will cram as much honey as they can into the brood-nest, then loaf a while, and finally swarm. In fact, I doubt if they ever go "upstairs" without having first loafed to some extent.

Where the flow comes heavy and suddenly, and at a time of the year when the weather is already quite warm, the difficulty is not very great. A few bait sections of the previous season are all that is needed.

In my locality the case is usually different, and far more difficult. The flow comes irregularly from different sources, and to obtain anything like a crop, the bees should be in the supers by the first of May. At that time cool spells of weather are apt to come occasionally. And handicapped by the cool weather and a too-light flow, the bees are apt to loaf instead of going into the supers.

Among the different processes I tried, the following gives excellent results: Take out 2 or 3 combs from the brood-nest and put in their places some sections filled with foundation. In a few days, when the bees are at work in them, put them in the super, bees and all. Finish the super with foundation or old bait-combs, if you have them, and restore to the brood-nest the combs taken out. The past summer I stumbled on a process that is still better, but I want to try it again another year before bragging about it.

STRONG AND WEAK COLONIES.

It is hardly necessary to say here that it is useless to attempt forcing the bees into the sections unless the colony is strong enough, and the brood-nest nearly full of brood and honey.

But often a large number of colonies have failed to reach that condition when the flow opens. Where the flow is long and certain, it might be best to let them gather up full strength and send them into the supers later. But such localities are the exception. In this locality the flow is long enough, but mighty uncertain, intermittent, and variable. The first portion is less liable to fail than the last. So, as a rule, it will be best in the majority of cases to have the bees at work in the sections as soon as the flow is strong enough to justify it, and the weather sufficiently warm.

If the bees are too weak, or, rather, if the brood-chamber is not sufficiently full, what is to be done?

The process generally followed is to contract the brood-nest, leaving the brood in preference, and take away the empty or partially empty combs rather than the others. That does not work to the best advantage, at least not with me. The contraction of the brood-nest starts the swarming fever at once, and the reduction of brood-rearing weakens the colony. The result of this reduction is that during the latter part of the flow the colony is too weak to do the best work possible.

I prefer to take combs as full of brood as possible from a few of the weakest colonies, and exchange them for the empty or nearly empty combs of the strongest, so as to give me at the beginning of the flow the largest number possible of strong colonies to work for honey and a few weak ones which are expected only to build up strong for the following year. I get far better results that way. Very strong colonies always give more surplus than a larger number of somewhat weaker ones.

Comb vs. Extracted Honey.

The advice is often given to secure the white honey in the comb, and the dark as extracted. That is probably right when it comes to ship to the large cities, but it certainly does not work in this market. The dark honey from whitewood, or honey-dew from the white oak and hickories, when contained in new, white combs, sections or chunk honey, will sell without difficulty. The color in a cell of white wax is not very apparent. Neither when spilt on a white plate, on account of its being in a very thin layer. But extract it and put it in a bucket, and it will look dark, sure enough, and be often unsalable.

The fact is that a honey which in a white, new comb will present an amber color, will be dark, even very dark, when looked at in a large quantity when extracted. This, I think, has never been considered yet in the apicultural press, but is certainly worth knowing.

Knoxville, Tenn.

Feeding Bees On Sugar Syrup for Winter Stores

BY C. P. DADANT.

Very few apiarists enjoy the task of furnishing sugar syrup to the bees for winter. Not only this is a very positive sign that there has been an insufficient crop, or that the honey was of bad quality, but there is also the unpleasant feature of having some jealous or ill-natured people casting remarks about feeding sugar to make honey. We do as little as we can of this sugar-feeding, but there are plenty of occasions when feeding must be resorted to. So it is well to know all the obstacles in the way of success.

On page 335, Dr. C. C. Miller protests against my crediting him with the idea of feeding percolated sugar syrup, and assures us that he was not the originator of this method. We are well aware that Dr. Miller is too modest to accept credit which he does not deserve. He can well afford to refuse that which does not belong to him, since he has already so much to his credit in the way of apiarian information. The reason I quoted him was that I have a very plain recollection of his praising this method. There was a time when we could hunt up the source of information on such subjects and give credit where credit was due. But the amount of bee-literature has grown to such proportions that seeking such information in the back numbers of the bee-papers could be readily compared to the old proverb of looking for a needle in a hay stack. I have on my shelves 49 years of the old American Bee Journal, 37 years of Gleanings, some 22 years of the Review, 42 years of L'Apicoltore, of Milan, and numberless volumes of French bee-publications. I have long ago quit hunting for authorities for lack of time.

But Dr. Miller, in the article quoted, says something on which I wish to comment. He writes:

> "I don't believe there is any great advantage in it (percolating). Sugar stirred in water till dissolved is as good as anything."

Now as to my experience: The first occasion I had to feed syrup to bees was, I believe, about 1873. I remember very distinctly that in a number of hives the sugar syrup crystallized and became exactly like rock candy, so hard that the bees could do nothing with it, and even with moisture consecutively for a number of days much of the sugar was thrown out in lumps, and much remained untouched. A number of colonies starved to death on these stores, as well they might in such conditions. Yet we had a good authority for following this method. It was no less than Mr. Quinby. We have since used about a fifth of pure honey mixed with the sugar, or a small quantity of cream of tartar, say a teaspoonful to every 30 pounds of feed.

It is quite possible that there was some fault with the sugar used, or with our method of mixing it, when we obtained rock candy for our sugar syrup, but the experience was such that I would not like to see the same thing happen to others. As I understand it, the percolating method did away with the danger of crystallization, and I take it for granted that by this method the water loads itself with only such proportion of the sugar as it can readily carry in the liquid state. However, we want our syrup as thick as possible, and find that a mixture of honey will help.

There is still another method of feeding bees which would prove very useful if resorted to at times when the weather is too cold to feed bees with liquid food. This method is also the best for feeding bees in the cellar. It is the "candy method." One of our Western apiarists, an experienced veteran, tells me that he always winters his weak colonies in the cellar and feeds them with candy over the top of the combs with the best results. The method is not new. It was first recommended in America by Mr. Langstroth, over half a century ago. He had found it in the German "Bienenzeitung," as given by a bee-keeper of Silesia, Mr. Weigel.

Dissolve the sugar, put a teaspoonful of cream of tartar to each 20 pounds of sugar. Boil until sufficiently evaporated. To know when it is done, dip your finger first into cold water then into the syrup—if what adheres is brittle when chewed, it is boiled enough. It should be kept stirred while heating so as not to burn. Pour into pans that are slightly greased, so that it will slip out easily. Then cut into pieces of proper size. It takes less of this candy than of syrup to sustain a colony. Mr. Langstroth actually wintered colonies on 4 pounds of candy in the cellar, and he asserted that it would serve the same purpose as twice the quantity of honey. When the candy is properly made, there is no danger of any loss by its becoming too hard for the bees to consume. It does not attract robber-bees, does not load the bees with an unnecessary amount of water, can be carried about without leakage or loss, and procures the nourishment in as compact a shape as it is possible to have it.

This candy, however, is not desirable as bee-food when it is necessary to induce the bees to breed. Moisture is wanted then. The candy being as devoid of moisture as it is possible for bee-food to be, is good for protracted confinement. But if we want the bees to breed, either in early fall or spring, we had best give them liquid food, warm if convenient.

To feed the candy to bees in the cellar, I would recommend to place it over the cluster at the top of the brood-chamber, laying it flat over the combs and covering the hive with an ordinary cover or super. Very weak colonies, if healthy, may be brought through in good condition, and with very little loss of bees with this method.

Since writing the above, I see the matter of making sugar syrup for bee-food discussed in the Review and in Gleanings. In the Review, Elmer Hutchinson says: "Some think it better to add part honey, or a little tartaric acid in order to prevent granulation, but we have fed a great many barrels of sugar prepared in this way * * * and we never yet have known it to granulate." (Review of October, page 306.)

In Gleanings the editor, page 623, says: "With regard to the use of either acid or honey, we have never found it essential. We simply mix up the sugar and water, stirring until the sugar is all dissolved."

Judging by the above authorities, there must be very little danger of the crystallization which occurred in my case. Whether the sugar was of a different quality from the average now sold or whether we used too little water, let me repeat it, the syrup did not "granulate," as we understand the granulation of honey, in coarse soft lumps. In such a case, there would have been no loss, for the bees could probably use it, but the change was in the shape of a hard and brittle crystallization, the syrup was changed to "rock candy." Perhaps some confectioner or candy manufacturer could explain to us how this result is attained, so that we might be sure to avoid it, but I know that the use of the acid or of honey secures this end. The formation of candy out of syrup is a sort of soft granulation, which is also in a shape accessible to the bees, and that is all we are seeking.

Hamilton, Ill.

The Two Cans of Honey

BY E. D. TOWNSEND.

The two cans were of the 5-gallon style, with the popular 1¾-inch screw-cap—bright, shiny cans; the fact is, there was no difference in them; but not so with their contents, although it was all gathered from the same source, by the same strain of bees. The fact is, it was all clover honey, gathered from the white variety; both cans were labeled, one can bore the name of "Mr. Ripe," the other "Mr. Green;" both were from the same location—Hubbardston, Mich.

The fact that this honey was gathered from the clover, in the vicinity of Hubbardston, was in itself sufficient evidence that the nectar gathered by the bees was the finest the world ever produced; for isn't it known that Michigan produces the very finest honey?

Then there was another mark on the labels, other than the name of the producer; it was dates, and I would have the reader bear in mind these dates, for they have more to do with the story than any other one thing. One can was dated "June 23d," the other "Aug. 1st."

The casual observer will see no significance in these dates, but the experienced extracted-honey producer will know that great possibilities lie between those two dates; for, be it known, these were the dates of extracting those two cans of honey—one June 23d, the other Aug. 1st.

It had been mentioned that there was some alsike clover in this vicinity, and some have gone so far as to hint that quite a part of the honey gathered in this location was from alsike clover. Be this as it may be, the alsike did not hurt the quality of the white clover honey, neither did the white clover honey hurt the quality of the alsike honey, for those with large experience could not tell the one from the other, or the other from the one, but all were agreed that this honey was as good as was ever produced anywhere.

Mr. Ripe and Mr. Green were neighbors; they had been neighbors for years, but it was not until they had both acquired a few colonies of bees that they became fast friends.

Mr. Ripe told Mr. Green his plans, and Mr. Green told Mr. Ripe his plans. If Mr. Green bought a queen of some famous strain as a breeder, Mr. Ripe used her as if his own; when text-books were bought, they each bought differently, and they would exchange back and forth until there would be no telling which owned which, unless perchance one happened to write his name on the cover, or, maybe a reference would be written on the fly-leaf, or something of that sort would be the only indication as to who bought the book, for what difference did it make who owned the book, as they both read it, and both bought about the same number of books?

It was the same with bee-papers—they both subscribed for their share, so when they had exchanged back and forth, as they always did, they had the benefit of all of the leading periodicals pertaining to their pursuit.

Thus it happened that one was about as well posted on the modern methods of the production of extracted honey as the other; the fact was, there was no difference between them in this respect. They are both farmers, their farms joined; both began at the bottom of the ladder. Both came to this new location and "built up with the country;" both owned the same number of acres of land, and had buildings and improvements about the same. The neighbors said they were both "pretty well fixed," neither had much, if anything, but what the other had, so there were none of those petty jealousies between them so likely to be when one neighbor is a little more prosperous than the other.

They had both kept bees for about 10 years, and owned about 50 colonies each. Like the most progressive bee-keepers of the State, they bought enough upper stories, and had them filled out with combs to hold the whole crop of honey; and as there was no buckwheat produced in this particular location, the honey was not extracted until it was thoroughly cured by the bees; many times having their farm work to do, and knowing that the honey was growing better and better each day that it was left on the hive. Often it would be late in August before they would do their extracting. For be it known they owned but one extractor between them, and always exchanged work in extracting, as they did in many other parts of the bee-work.

They did not brag of large crops, those two bee-keepers, but when it came to good goods and ready sales they were always present. Why not? Wasn't their honey a little better than the ordinary? Some of their customers said there was no comparison, and went so far as to hint that there was as much difference between theirs and the ordinary honey on the market as there was between fresh and rotten eggs. This as it may be, the writer only repeats it "as it was told."

At any rate, they had no trouble in disposing of all the honey they could produce in the little towns of Hubbardston and Carson City, and at a good price. In this way many a grocery bill was paid that would have been hard to have met were it not for the bees, especially those two "bad seasons" when the honey was nearly all that they had to sell when fall came, it taking all the farm produce to keep their families over winter, to say nothing about paying previously contracted debts.

Things went on this way until 1906. And now comes the sad part of my story. It was at this time it would have been better had some things never been published, especially in Mr. Green's case, for didn't he read that it was much easier to produce honey by extracting it about as fast as the bees brought it in? and that it was just as good cured artificially, and you could save uncapping and many stings: and, not least, you could get *twice as much honey*, and such twaddle?

To be sure there was a mild protest from the editor, but not nearly enough to offset the amount of talk the enemy put up. I cannot get a word that quite fits the place as "enemy" does, for what is such talk but an enemy to the fraternity at large?

Messrs. Ripe and Green, like the rest of us, had more time to inform themselves on bee-matters during the long winter evenings than during the busy work season of summer, and it was during the latter part of the winter of 1906 that Mr. Green had been looking over the leading bee-papers of the previous year, when it was said a discussion something like the following took place between Mr. Ripe and Mr. Green:

Green—Charlie (this being Mr. Ripe's given name, they being so well acquainted each never thought of calling the other by his surname, so when Mr. Green spoke to Mr. Ripe, it was always "Charlie," and when Mr. Ripe spoke to Mr. Green, it was always "Dan," Daniel being the given name of Mr. Green), have you been reading all this talk about producing twice as much extracted honey by using only one upper story to the colony, and extracting before the honey is capped, thus doing away with all the work of uncapping? Then it goes on to say that one does not get stung so badly handling bees and extracting during the honey-flow, and you need only one upper story to the colony. This last would just strike me right the coming season, for you know I made some increase last summer, and by counting the upper stories and the number of bees I ought to have for next season's work, there would be one for each colony and a few to spare. You know if I practice the same method we always have, I'll have to buy several upper stories, comb foundation, etc. This new way will save all this expense, and that item of producing twice as much honey per colony is in itself sufficient for one to work this new (?) plan. You see, all you have to do is to leave the honey in an open tank for a week or so and nature does the rest, or, in other words, you evaporate the honey artificially.

Ripe—Yes, Dan, I have been reading the back numbers of the bee-papers these long evenings. I was too busy last season, so I find lots in the papers that I had not read on this account, and I have read about this very thing you are talking about. In the first place, Dan, you know that a specialist, or one in the business quite extensively, can afford to fix up things much more conveniently than either you or I can with our few bees, and a multiple of other work to do during the busy season. Don't you know, Dan, that there is not one in a hundred bee-keepers who has a suitable place to evaporate and artificially cure extracted honey even if they know how? Then about those shiftless fellows. My! what a mess they would make of it! Don't you know there is altogether too much raw honey on the market at the present time, to say nothing about what such writings are sure to bring forth. I'll admit that it is more pleasant to work with the bees during a honey-flow than during a dearth of honey, but we are not producing honey for the pleasure of extracting it at some specially favorable time, but for the money there is in it. This being the case, it behooves us, as good bee-keepers, to produce a good article, even if some part of the work comes at a time when robber-bees are bad and the bees cross. You mention that there is a claim that by extracting the honey before it is capped, then cure it artificially, there will be a gain of 100 percent in the quantity of honey produced. It seems to me that this is the most ridiculous claim ever palmed off on the American bee-keeper—that twice as much good, thick honey can be produced by extracting before it is sealed as can be had if allowed to be sealed by the bees before extracting. Do you think, Dan, that we have been keeping bees all these years and do not know better than that? Of course, I will have to admit that a good, well-ripened, all-sealed honey costs more to produce than an unsealed, inferior lot, but it's worth more, and brings more on the market; it's the kind that is a "trade builder," not a "trade killer." I never thought there was more than 10 percent difference in the amount stored between colonies extracted once a week and those where the honey was left on the hive until after the white honey-flow was past, then all extracted at once; and this 10 percent is offset by the better price secured and a ready sale.

This ground has all been gone over; the fact is, that when the extractor was introduced much of the honey was thrown out before it was capped and thoroughly cured, so do not think this idea of extracting before it is capped is anything new; the fact is, this used to be the orthodox way, and it is only during the last few years that the most progressive bee-keepers woke up and are now producing a much better article by leaving the surplus honey on the hive until it is all capped over, and longer, too, for many are leaving it on the hive as long as possible after the flow is past, thinking by so doing the honey is improved. Let me read to you, Dan, from the 1908 edition of the "A B C and X Y Z of Bee Culture," page 161:

> "We once were so busy that we could not attend to extracting, and so we raised the filled stories up, and put those filled with empty combs just under them over the brood. This occupied little time, and the bees were not hindered in their work a single moment. I have never seen bees amass stores faster. Some colonies filled four stories to repletion, and the whole was left on the hive until the latter part of the summer. In fact, I left them on the hives to be safe from the depredations of the moth, intending to cut out the honey and sell it in the comb or to extract it, whichever form should prove most marketable. This honey was cut out of the frames and sold the following winter, and it was the nicest and richest honey I ever saw or tasted. To my astonishment, the liquid portions that run out when the combs were cut, would not candy at all, even when exposed to zero freeze. The honey was so thick that a saucer full could be turned over without spilling."

In the above quotation there are no regrets or excuses made for neglecting to extract this honey before, and there is nothing said about the possibilities of having gotten twice as much honey if they could have gotten to it and extracted this honey every week, or just before it was capped; but, on the contrary, he says, "*I have never seen bees amass stores faster.* Some colonies filled four stories to repletion," etc.

You will notice, Dan, that I'm taking up quite a long time on this subject, as I consider it very important, for much depends upon the quality of the honey produced, as to how our market will be in the future. You know our honey, being of the white variety, will all go for table use, and it behooves us as bee-keepers to keep the standard of our honey well up, for if once the customer gets it into his head that honey is no better than the cheap sweets on the market, he will buy them and let the honey go by, for don't you see his honey will go farther that way? The housewife soon learns what is relished on the table and buys accordingly.

(Continued next month.)

Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

Bees Not In It

Through the courtesy of the University of California, I am in receipt of Circular No. 45, which announces the "Farmers' Short Courses for 1909," at the University Farm at Davisville, this State. I have searched the pamphlet in vain to learn what the College of Agriculture is doing for the bee-keeper, but nary a word do I find to show that the honey-bee enters into the studies in the "Short Courses." I am sure it would be an easy matter to have one or two lectures on the care and management of bees incorporated in these courses, especially since the college has competent instructors to handle the subjects. Why not have Mr. Benton move most, if not all, of the University apiary to the big farm at Davisville, and in connection with it give some practical lectures and demonstrations on bees and bee-keeping? I hope to notice another year that apiculture is given a place in the "Farmers' Short Courses."

* * *

California Bee-Keepers' Mecca

I don't know if I mentioned it before, but if I didn't I should have done so. Perhaps no other occupation has drawn so many of its leading lights to this State as has the bee-keeping industry. I might except horticulture, which has no doubt brought a greater number of pomologists here than have the apicultural interests brought bee-keepers; but even then it cannot lay claim proportionately to so large a percentage of its leading lights, including authors, as has the bee-industry. The horticultural industry may be said to be co-extensive with the State, yet it has comparatively few members who have essayed to get out works relating to the fruits of the State, or even general treatises on the subject of fruits. Luthur Burbank has, with the aid of others, I believe, written on fruits and plants, and he may be said to be the only cultivator of the soil who has done so. Yet the best book on the fruits of California has been prepared by Prof. Wickson, Dean of the Agricultural College of the State University, and Horticultural editor of the Pacific Rural Press.

Now, on the other hand, the California bee claimed an author at the very beginning of the sixties—at a time when the industry was in its swaddling clothes. J. S. Harbinson, with the aid of a certain ministerial friend, published the "Bee-Keepers' Directory," in 1861, and a very creditable work it was, and it might be said to be the only book on the subject that was entirely written on our soil. But we have had many authors of bee-books since resident of the State. To-day we have Prof. A. J. Cook, the author of the "Bee-Keepers' Guide," one of the very best works on apiculture ever published, living and doing good work in our clime; so, also, Prof. A. J. King, for many years owner and editor of the "Bee-Keepers' Magazine" and co-writer of the "Bee-Keepers' Text-Book." And we have Prof. Ralph Benton, of our State University, who brought out an interesting work on bees and bee-keeping before he came to this State, and that at a time when he was quite young, and who, since coming here, has written a book for California bee-keepers, and hopes to have it issued soon from the press. Thomas G. Newman, a former editor of the "American Bee Journal," and who resided for many years in San Francisco, where he died a few years ago, was the author of "Bees and Honey." Thomas Wm. Cowan, the English scientist, and for many years active editor of the "British Bee Journal," resided here some 5 years. His two books on the bee and on bee-keeping are standard in England, and his work on the natural history of the bee is classic.

Of the bee-editors who have been here at some time or another, we can perhaps claim to have had the whole bunch here to learn "how doth the busy bee" in the Golden West; also to get acquainted with our strenuous bee-ranchers. One of these editors came from far-off Australia and visited the State several times. He liked American bee-methods, and Californian practices in particular very much.

So now ye historians and publishers of "promotion literature," don't forget to make a note of the fact that the honey-bee has done her full share to make a big niche in the commercial life of the State, and has also caused the printing press to send forth works to swell our literary fame; and last but not least, she has brought many good citizens here to enjoy our delightful climate, and, at the same time, build up the commonwealth.

The Plague of Hornets

Perhaps some of my readers have at some time or another been "up against" a lot of hornets. I remember once when I was quite a youngster coming bang up against a hornets' nest and a multitude of stings which such close proximity to a hornets' habitation entails. After that I "swore off" on hornets, and like the Australian who went armed for the extermination of Duky snakes, I never lost an opportunity thereafter to get in my deadly work on all hornets that I found on mischief bent. This year these insects seem to be more plentiful than usual. They seem to persist in getting into the honey-house, and they even try to effect an entrance into bee-hives. I have seen them engaged in a hand-to-hand tussle, if I may so put it, with a honey-bee, and sometimes they would be the victors, much to my disgust. They are bad on the fruit, so whenever I see a number of them eating away for dear life on a fruit upon the ground I would squash the aggregation under one of my feet, much to my pleasure, though I am rather chicken-hearted when it comes to taking the life of anything.

Recently I saw in the Pacific Rural Press where Frank Swett, the well-known grape-juice maker of Contra Costa county, gave a plan which never fails in trapping hornets. Briefly it consists of a shallow pan of soapy water over which is placed a narrow board so that it is about an inch above the liquid. On the under side is tacked a small piece of fresh meat. The latter attracts the hornets, and in their mad scramble to get at the meat they are constantly pushing the other fellows off, and before they can get up sufficient wing-power, they are landed in the water never to get out. Just try it; I have, and it works splendidly.

K. M. Henneken, Bee-Inspector

I was particularly attracted at the Monterey Bee-Institute last winter by two or three persons who were present. One of these figures was more conspicuous than the others, owing to the fact that it is a rarity ever to see one of his race present at a bee-meeting in America. I refer to the Celestial bee-keeper, Sem Ling, of Monterey. But of the personality and so forth of Sem Ling I shall not attempt to sing at this time. But the most picturesque, as well as the most enthusiastic, person at the meeting was K. M. Henneken, the foul brood inspector of the county. This gentleman takes his position very seriously, so much so that many of the bee-keepers of the county, I was told, seem to think that he tries to be the "It" of that portion of the State. In this particular I feel that they make a mistake; they do not sufficiently understand the temperament of their inspector, otherwise they would hold a different opinion of him. He is a man of strong convictions—perhaps too much so. He has the courage of his convictions, and will carry them out at any sacrifice to himself. This he showed at an early age, as was illustrated very strongly when he took opposite sides with his family, and joined the Northern army in the Civil War.

INSPECTOR K. M. HENNEKEN.

Mr. Henneken was born in Missouri in 1840, where his father ranched and kept a few colonies of bees in skeps. After seeing active service in the war he went to California and remained there ever since. He has shifted about through the northern portion of the State, engaging in mining, farming, and for a time at his trade of machinist at the Navy Yard at Mare Island.

His first attempts at bee-keeping in this State were not successes. Since going to Monterey county he has secured better results; at this time he has about 175 colonies at his apiary south of the city of Monterey. Three years ago he was made foul-brood inspector of the county. He tells some interesting stories about his experience in his chase after the foul-brood microbe. His way from apiary to apiary has not always been strewn with roses. On one occasion when he called to straighten out an infested apiary, the proprietor made him "hike" on the double quick o'er the hills and far away. He did not fear the confederates when he was shouldering a musket for Uncle Sam, but he did have a dread of a loaded gun in a bee-general's hands. He says a foul-brood inspector is not any too well compensated for the job he has to perform.

Mr. Henneken lives with his wife and family close to Monterey bay, a short distance east of Hotel Del Montey, his apiary being well inland, where the bee-pasturage is good.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

Use of Pollen-Filled Combs

As a rule, there is no need of advising bee-keepers not to melt up old combs, as generally speaking there are not enough of combs put into wax. However, I am convinced that many good apiarists often melt up brood-combs that are filled with pollen under the mistaken notion that such combs are valueless. Now when those combs are straight, well wired and perfect in every way, barring the pollen, I hold that it is a positive waste to put such combs into wax. That this is often done was shown to the writer several times during the past season, hence my reason for mentioning the matter at this time. What shall we do with them? Why, simply give them in small numbers to swarms, or even nuclei with young queens, and in a few weeks, at most, the combs will be free from pollen, I will warrant. This has been my practice for some years, whenever any combs like this were found, and they will be more or less in all apiaries, especially if a lot of bees are looked after with but little help.

While I have never given more than 3 or 4 at the most, of these pollen-filled combs, at once to a swarm, an experience the past summer opened my eyes as to what a lot of bees with a good young queen are capable of accomplishing when thrown into a hive of combs filled with pollen. At the Cashel apiary, early in the spring, a colony was found with a crippled queen. My intention was to requeen as soon as possible, but in the rush of the busy season later on the matter was forgotten until one day I looked in the hive to see if the queen had been superseded. Examination showed the colony to be queenless, and all the combs were literally filled with pollen—the hive was of the 10-frame Jumbo size. This was just at the close of the clover flow, and just a few days after having found the condition of the colony, while I happened to be in the yard out came a large swarm—doubtless a case of supersedure.

No hives were ready to receive swarms, so I threw them into this queenless swarm that had the combs filled solid with pollen, intending in a day or so to place better combs in the hive. Well, again, this was neglected, and about 3 weeks later when the buckwheat was in bloom, we again looked into this hive, and instead of finding, as was expected, a few patches of brood here and there among the pollen, what was our surprise to see 7 combs of as nice solid brood as it has ever been my lot to look at.

Now, as I have said, these combs were simply solid with pollen when the swarm was thrown on them, and how it was removed so perfectly is a mystery to me. Of course, a lot of mature bees with a young queen is quite a different proposition as compared with a colony that has become queenless and gradually filled up combs with pollen, while at the same time the bees were rapidly being reduced in numbers. To introduce a queen into such a colony with all the pollen-filled combs left in would be sheer folly.

Let me again say, that I regard combs as being good value even if filled with pollen, provided that they are perfect in other ways. Yes, and sometimes in springs like the last one, when nearly all colonies were short of pollen, heavy pollen-filled combs can be easily of as much value as though they were filled with honey. It is an easy matter to provide for deficiencies in the way of honey, but not nearly as easy, especially in bad weather, to make up a substitute for pollen.

Let me say in conclusion, that many hundreds of combs are carried over each year that should be melted up into wax, but don't let pollen alone be an excuse for putting the combs into the melting pot.

Doctor Miller's Question-Box

Send Questions either to the office of the American Bee Journal or to
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Dr. Miller does *not* answer Questions by mail.

A Beer-Keg Colony

Some time ago I bought a colony of bees. They are in a beer-keg. The bottom end has been knocked out and set on a board with small holes cut in the bottom of the keg for the bees to go out and in. But there is no way of getting honey out. What I want to know is, how I can get the bees out and put them in a good hive. When is the best time of the year to do it? Should I transfer them now? What can I do to keep them alive this winter? Kindly give a full description, as I know nothing about bee-keeping.
COLORADO.

ANSWER.—Don't think of meddling with them before next summer. Then wait till the bees swarm, hive the swarm in a good hive, set it on the old stand, with the old keg close beside it, and 21 days later, when all the worker-brood has hatched out, break up the keg, add the bees to the swarm, and melt up the combs.

Swarm Deserting—Likely Unripe Honey

1. When my first swarm came out it was big. I hived it in a new hive and was pleased with the good job. Two hours later I looked at Danzenbaker's book, "Facts About Bees," and with his advice I gave them a frame of brood. Then I think it was on the 17th day I was sick. It seemed I heard a noise, but could not move. The next day I went out. The hive porch was empty. It seemed that swarm was gone. Why?

2. In a covered tank I have honey harvested a few months ago. Whenever I dip it up with a spoon and fill a glass it becomes al' foamy, and runs out of the glass. Does it show that the honey is not ripe? I don't remember if it was all sealed. FLORIDA.

ANSWERS.—1. It is nothing very unusual for a swarm to desert its hive, sometimes even in spite of a frame of brood being present. A common cause is too much heat. A newly hived swarm should have extra ventilation for the first 2 or 3 days. A good plan is to raise the hive a little, and also to leave the top a little open. Sometimes the queen does not go with the swarm, in which case the swarm returns to the old hive.

2. The probability is that the honey was very unripe.

Flight of Drone and Queen—Tested Queen, Etc.

1. How far will a drone fly from a hive?
2. How far will a virgin queen fly from a hive?
3. Is a tested queen a fertilized queen?
4. If I had thoroughbred Italian bees ¼ of a mile from 50 colonies of black and hybrid bees, would my Italian virgin queens mate with the drones from the 50 colonies?
5. How many bees in a quart?

6. When hives are right on the ground, I find lots of toads around them at night. Do they eat bees?

I have 50 colonies of bees here. I think it is a good place for bees. TEXAS.

ANSWERS.—1 and 2. I don't know, and I'm afraid you'll never know. I think it has been said that a drone may meet a virgin whose home is perhaps as much as 4 or 5 miles from his home, although as a rule such long flights are not made. Some think that a mile, or even a half mile, is as far apart as the 2 homes usually are. But if you knew exactly how far apart the two homes are, you are still left in the dark as to how much of the distance is made by the drone and how much by the virgin.
3. Yes.
4. Probably in nearly every case.
5. A pound of bees may contain from 4000 to 5500. Just now, I'm sorry to say, I don't know where to turn to find how many bees in a quart.
6. I'm afraid they do.

Bees On Texas Plains

Will bees be a success on the south plains on the line of Texas and New Mexico?
TEXAS.

ANSWER.—I can only guess; and my guess would be that bees will do well there.

Excluders and Chunk Honey—Space Above Brood-Frames

1. I have "Forty Years Among the Bees," and find it quite useful. I use the T-super. My bees worked in them as soon as put on, without baits. Almost all the honey came from the woods. Clover had very little honey in it. The queens did not go into the supers. I do not use excluders. To produce chunk honey do you think I could run without them?
2. One man in this State writes that he uses the wood-and-wire honey-boards. If one has to use excluders, is it necessary for them to fit in on the frames, or can they rest on top of the brood-chamber with the super upon it?
3. Which do you like better, ¼-inch or ⅜-inch space above the frames in the brood-chamber? KENTUCKY.

ANSWERS.—1. I'm afraid that in working for chunk honey, or bulk honey, as the Texans prefer to call it, you will find that without excluders the queen will find it altogether too convenient to go upstairs to deposit her eggs. With sections it is not the same, as there are separators, and the compartments are smaller.
2. Yes, all the excluders I ever used were placed directly on the brood-chamber, there being a bee-space between the top-bars and the excluder, and also between the excluder and the bottom-bars over it.

3. Emphatically the smaller space. Years ago I had the ⅜ space, and had comb galore built in it.

Getting Rid of Moths

There are moths in my bee-hives. What must I do to get rid of them? The colonies are all new (this year's swarms), and they are strong, and great workers. The worms are just manifesting themselves, and it being so late in the season, what would I better do? Please answer in full as I am a beginner with bees. INDIANA.

ANSWER.—I don't believe you need to do anything. As late as this there is not much chance for increase of moths before next summer. If the colonies are really "strong and great workers" I don't believe there is as much trouble as you think. If a strong colony lets the moth get a start, then the bees are at fault, and the thing to do is to introduce Italian blood.

Honey-Dew for Bees in Cellar—Tar-Paper for Outside Protection

1. Kindly give your opinion as to bees wintering in cellar on "honey-dew?" My bees used up a large portion of this honey-dew which they gathered earlier in the season, in summer breeding, but yet while they have a good quantity of honey to winter on, much of it seems to be dark and of a strong, almost sourish taste.
2. Do you think tar-paper the best outside protection? ILLINOIS.

ANSWERS.—1. A small amount of honey-dew in winter stores seems to do little or no harm, but in large quantity it is likely to do much harm. Of course there is a difference in honey-dew in taste, and there may be kinds not so bad for wintering as others, but it is not safe to count on that. Although the honey-crop was a failure, it is just possible that you had a pretty fair fall flow, and that as the brood-nest became less the vacant cells were filled with honey of good quality for wintering. If you had extracted in September, or even early in October, and fed sugar syrup, it might have been safer, but it is late for that now. You might, however, lay a cake of candy, say an inch thick, over top-bars, if you think you dare not risk what is in the combs, as the bees would be likely to use the candy first.

2. It is certainly good; whether it is better than an outside wall of boards I don't know, but it's cheaper and more convenient.

Vegetable Cellar for Bees in Winter

Will a cellar containing vegetables, potatoes, etc., be a good place to winter bees? Would the odor from the vegetables hurt the bees? MINNESOTA.

ANSWER.—That depends. If like too many cellars, with a lot of decayed vegetables and the air foul and moldy, the bees will not do well. If the cellar is kept as clean as it should be for civilized beings to live over, the bees will not object to the odor of the vegetables.

Hive Entrance Almost Sealed Up

I have a colony of bees in a hive that has an entrance 1¼ inches deep and 12 inches long, and they have sealed it up all but just space enough for a bee to pass through at the bottom. Should the sealing be cut out before the flow starts next spring? LOUISIANA.

ANSWER.—If that is all the chance they have for ventilation, better not wait till spring, but clear out the opening at once. Otherwise they will have too little air for good wintering.

Late Queens Bead

Yesterday morning, in looking at my hives and bees, I saw on the alighting-board of one the remains of at least 2 queen-cells and one very young queen not quite dead. This morning I found 2 more queens dead, one of a darker color than the other 2. Could the dark queen be the mother of the colony? Is it usual for such an occurrence so late in the season? PENNSYLVANIA.

ANSWER.—It is not usual to find queens hatching as late as Oct. 18, but still there is nothing remarkable about it. If by any chance a queen should be killed, queen-cells would be started at any time while young brood was yet in the hive. It is not likely that either of the dead queens was the old queen.

Warning Against Ants

I have just tried the plan of introducing a valuable queen mentioned on page 252 of "Forty Years Among the Bees." I released the queen and her attendants on 4 frames of hatching brood and 4 frames of honey, and placed it on another hive according to directions. All would have been well if about 1,000,000 little red ants had not taken possession; killed the queen and the hatching brood. I almost cried when I opened the hive 5 days later to see the havoc wrought. I write you that you may warn others to make hives ant-tight as well as bee-tight, when introducing queens. CALIFORNIA.

ANSWER.—Thanks for the warning. Ants are a factor in some places that must be reckoned with, if a valuable queen is to be put on hatching brood with no force of workers to defend the queen and brood. Indeed in some places in the South they are so bad that no force of bees is sufficient to withstand them, and the hives must be so safeguarded that no ant can get into them.

Wintering Nuclei

1. Through my carelessness and a poor season I have 2 weak nuclei at the commencement of cool weather, which I am desirous of wintering over, as they are headed by two of my best queens. How shall I best winter them over? They are of about 3-frame strength. In this locality people winter bees out-of-doors altogether. Our winters are, as as a rule, rather open. Sometimes it goes to zero, but that is seldom. The bees have a flight about every 2 or 3 weeks.

2. The past summer I caught a swarm of bees and put them into a frame hive. I opened the hive a little later, and from indications they had a good queen. About 6 or 7 weeks later I went to requeen them, and found that they were in a very bad condition, for there wasn't more than a quart of bees in the hive and about half of them were drones. There was no queen nor live worker-brood. There was some dead brood. It was black. There was no smell about it. What do you suppose was the matter? MISSOURI.

ANSWERS.—1. One way is to winter both in the same hive. Put in a division-board that separates the hive in 2 equal parts, and put the nuclei in these 2 parts, each nucleus up against the division-board, so that they may have the advantage of the mutual heat from each other. It is possible they might winter through in separate hives, if the hives are well protected. Strengthening each nucleus by giving brood and bees (bees alone if the brood has all hatched out) from other colonies will help their chances if you should try to winter them in separate hives.

2. The large proportion of drones suggests a drone-laying queen, or else laying workers. There being no young workers hatching out to keep up the strength of the colony, it would inevitably dwindle away.

A Bee-Eater—Boxing Bee-Trees

Mr. W. F. Card, of Fulton, Ky., and I caught a large fly, the two wings about one inch long, with long slim abdomen, 6 legs all coming out close together, body and all about 1¼ inches long and dull ash color. It has very quick, rapid flight and keeps close to the ground. It will catch a great many bees when they are out feeding, and holds them tight and sucks them to death, and lets them go. Is this enemy commonly known to bee-keepers.

I am a beginner this year. I have caught and bought and cut trees this year, and will have at the beginning of winter about 20 colonies in new standard hives. All early ones are doing well, but my late colonies will require feeding. I am thinking of putting in a few bought queens in my best colonies now. Last spring I put some boxes 10x12x14 inches over the holes in several bee-trees, and this fall I took them down and they were full of bees and honey. I was very successful. KENTUCKY.

ANSWER.—It may be a robber-fly (Asilus missouriensis , mentioned in Cook's Manual, page 488.

Building Comb Between Top-Bars—Six Colonies for One Super

1. What was the cause of one colony building comb between the frames at the top of the hive, leaving only a hole big enough to pass up through between some frames, and others not?

2. Could more than one colony be made to work in one super, say 6 hives set 3 side by side and the other 3 the same with backs together and one large super put over all 6, and filled with sections of foundation and left until time to remove in the fall? Would it be necessary to use queen-excluders to keep the queens separate or in the hives?

3. If so, would such colonies be likely to swarm with plenty of room in the super? MISSOURI.

ANSWERS.—1. It's a way that bees have when they are strong, and I don't know why they do it. Possibly being crowded for room may have made the matter worse.

2. Yes, 2 colonies have been worked that way, and no doubt 6 could. But I prophesy you won't like it if you try it.

3. I don't think it would prevent swarming. No amount of room in the super will always do that, although being crowded for room will help to make bees swarm.

A Beginner's Questions

1. Will bees rear drones without a queen?
2. How do you tell foul brood comb after the bees are gone?
3. What is a safe plan to clean a foul-broody hive?
4. Can a queen sting?
5. Does it kill a bee to sting anything?
6. Am I likely to lose a queen by changing the location of a hive? MISSOURI.

ANSWERS.—1. Yes.

2. Just the same as when bees are present—by the appearance of the brood. If you mean combs in a hive where there have been no bees for a long while, that isn't so easy; but even then the dried scales of the diseased brood help to diagnose the case.

3. There are a good many who think it is not necessary to disinfect the hive at all. Those who disinfect the hive sometimes throw in a handful of straw and burn it out; others anoint the inside with kerosene or gasoline and burn it out; perhaps the most thorough way is to go carefully over the whole inside surface with a painters gasoline blow-lamp.

4. Yes; but she will sting only another queen, with very rare exceptions.

5. Formerly it was held that it does; now it is known that at least a bee may live quite a while after losing its sting.

6. No; but it sometimes happens that when you make two colonies exchange places, one or both of the queens may be killed.

Queer Actions of Requeened Colony

I had a funny experience with a queen. I introduced her nicely to a colony of bees. She stayed about a week and they cleaned up nicely for her, but she came out and went off and took the bees with her. She stayed 3 days, came back a week ago last Sunday (Oct. 3) and went into the hive all right, but came out again and went off and never did come back any more. So I guess I have lost her. How do you account for such a thing? TENNESSEE.

ANSWER.—The specially hard part to account for is the going away and then coming back in 3 days. If it was in a time when swarms were common, I would rather think that she did not come back at all, but some other swarm. It is barely possible that the colony were dissatisfied with their quarters, swarmed out and settled on some tree, and then not finding any better place concluded to go back into the hive from which they came.

Sugar Stores for Winter—Colony from a Tree

1. Can bees winter without bee-bread?

2. Is a mixture of syrup made of equal parts of granulated sugar and water sufficient feed for them in winter?

3. Would there be any danger of syrup souring in old combs that have been used?

4. I have a colony of bees out of a tree that had been cut and robbed and left them without a home. I hived them on Sept. 20, 1909, and they had no honey. I fed them sugar syrup—all they could carry—and about a week after I hived them I examined the colony and found considerable brood. The bees are not yellow, they are of a dark color, but not very large. In regard to the brood, is it the disturbing, or is it a good laying queen?

5. Could worker-bees lay drone-eggs at this time of the year? WISCONSIN.

ANSWERS.—1. Yes; but they can rear no brood in the spring without pollen.

2. Yes, provided it is fed early enough; otherwise it should be 2 parts sugar to 1 of water, or even 2½ sugar to 1 of water. If fed as strong as the last, it is well to add an even teaspoonful of tartartic acid for each 20 pounds of sugar.

3. No more than in new combs, provided the old combs are in good condition just as the bees left them.

4. Most likely the queen is all right.

5. Yes, they never lay any but drone eggs; but they would likely stop before this time of year.

Balled Queen—Feeding Bees

1. A colony had a young queen hatch out and apparently treated her all right. I had not bothered or looked into the hive until I think it was the eighth or ninth day after the queen had hatched out, and on passing near by the hive I heard the queerest noise I ever heard among bees. It was not like any disturbed buzz I had ever heard, but seemed rather between a disturbed buzz and a whistle. I at once located the noise in this hive and immediately took off the cover to find a ball of bees as large as my fist down in some frames that were not filled with comb. I at once threw out the ball and found the young queen, caught, and caged her; donned a veil, got a smoker, and went after them good and strong, expecting to find either another queen or queen-cell. But, to my astonishment, I found neither. By this time I had the bees perfectly calm. I took the cage and released the queen, again smoking her with tobacco smoke and the other bees good and plenty, but the queen had no more than hit the frame until a bunch of bees had her and stung her so badly before I could get her away from them that she died in a few minutes after taking her away from them. I gave them a frame of fresh brood from a colony of leather-colored Italians. (These were 3-banded Italians.) They reared another queen right away, and she was mated

and went to laying all right in about 10 days. The queen that was killed was a golden Italian, and had not begun to lay. What was the cause of their killing her?

2. What would be your advice on feeding bees out say 100 or 200 yards from a bee-yard, when the weather was warm and no nectar to gather? When feeding became necessary would that not give them work and keep them from getting lazy? OKLAHOMA.

ANSWERS.—1. It is nothing so very unusual for bees to ball a queen and abuse her when she returns from her wedding trip, possibly because of some strange odor attached to the queen. Usually the queen is released after a time if left quietly alone, but her wings may be more or less torn. If a queen, virgin or laying, is found balled by her own bees, the best thing is quietly to close the hive at once and not open it again for a few days. Your interference only made matters worse, for a queen in a ball is not often stung. Indeed I have some doubt whether she is ever stung if the bee-keeper does not interfere. As you played the smoke vigorously, the probability is that you blew smoke directly on the ball while holding the smoker close to the ball. I think *hot* smoke blown upon a ball will always make the bees sting a queen, while if the smoker is held off at a distance and *cool* smoke blown upon them, it will make the bees release the queen.

2. The result would probably be all the same whether the feeding were done quite close or 200 yards away. The extra distance would make no difference with the industry of the bees. If bees are forced to lie idle for some days, and then nectar appears again, they will be just as industrious as if they had kept at work right along.

Packing Bees for Winter—Putting On Supers

1. In packing my bees for winter I have no access to oats chaff. Will dried clippings of lawns do if well packed down? Would common newspaper do? Would leaves do?

2. What time do you pack the bees for winter?

3. In putting on supers in the spring how do you do it? If each super contains 28 sections, how many supers would you put on? and do you put them on all at once, or put them on as filled? I suppose the time to put them on is in fruit-bloom. Am I right?

4. I have Root's "A B C of Bee-Culture," issued in 1879. Should I get a bee-book of more recent date?

5. How do you keep the section-boxes white and clean. The sections I took out were all covered with propolis, and were a sorry looking sight. How can this be helped? NEW JERSEY.

ANSWERS.—1. Either of the materials mentioned will answer, if they are good and dry.

2. November or late October.

3. Except in rare cases no surplus is stored from fruit-bloom, so it will do only harm to put on supers at that time, as it merely cools off the hive, thus hindering the rearing of brood. Only one super is put on at first, and a second one put under it when the first is perhaps half filled.

4. Of couse the latest is the best, but the main principles are the same now as formerly.

5. In some supers the sections are protected so that the bees cannot get at much of the wood to soil it, but the best that can be done they will be able to get at some of the wood, and the bees are sure to crowd glue into the cracks that must be made by covering up, for it is their nature to crowd glue into any crack not big enough for them to crawl through, while a plane surface fully exposed will get very little glue. I prefer T-supers which leave bottom and top of the sections entirely exposed, and then they are scraped with a steel cabinet scraper and sandpapered.

Late-Reared Queens—Fall Nuclei

1. I am a beginner in the bee-business with 3 colonies, and have good Italian stock, and want to increase them next year. Which is the best time to do it, in the spring or in August? I have a neighbor bee-keeper who has made a success at it. He starts his swarms in the month of August, so that he will have laying queens in September. He claims queens reared in August, so that they will lay about Sept. 1, will rear hardier bees, and will stand the winter better than those reared in the spring, and are less apt to swarm. He has kept bees for 25 years, and followed this method of increasing for the last 10 years. He also claims that a colt which comes in the fall of the year will not get as big as a colt which is born in the spring of the year. The fall colt, he claims, will be tougher, hardier, stand more work, live longer if not killed by accident, and is less liable to disease. You may think this is all silly talk. It is not. He is a reader of the American Bee Journal like myself, and he keeps over 200 colonies of bees, and if any man can get honey from bees, he knows how to do it.

2. Would it make any difference in bees to start nuclei in the fall and winter them in a cellar? and would it make any difference about swarming? A SUBSCRIBER.

ANSWERS.—1. I don't know about that colt business, but your friend is quite right that a later reared queen is superior to one reared much before swarming time. We may pretty safely refer to the bees themselves to find out when *they* do the most queen-rearing. Perhaps the largest number of queens is reared at swarming time, and many are reared from that time on till the close of harvest, for most of the superseding is done about the close of the harvest. So we may count it good practise to rear queens any time from swarming time up to the close of harvest. A late-reared queen ought to hold out longer than one reared earlier, as she is younger. But it must be remembered also that the sooner a queen is reared the sooner we have the use of her. Whether a queen be reared early or late, she will lay just so many eggs in the course of her lifetime. But a queen reared much before swarming time is generally not worth the powder to blow her up.

2. You will not find it the easiest thing to winter nuclei, and will probably find no great advantage in it.

Queen Killed—Sugar for Feeding Bees—Uniting Colonies—Laying Workers—Banat Bees

1. I have one colony of bees that lost its queen 15 days ago. I found their queen on the ground dead. I immediately looked through the colony. No young queen was to be found. There was some sealed brood in the hive, but no queen-cells or sign of any. What killed the queen? Ought I try to give them another queen, or will they live through till spring, or should I wait till spring to give them another queen?

2. I see that granulated sugar is recommended for feeding bees. Will they not live if fed on common brown sugar? If not, what is the difference?

3. I told you of the colony that had been queenless so long. I have a very late swarm that is short of stores and has a good queen. Can I unite the two without danger to the queen? If so, how? The one that has the queen is in a log hive. Should I set the log hive on top of the movable-frame hive, or how should I proceed? Please explain or give your plan.

4. Will bees have laying workers after losing their queen late in the fall?

5. How about the Banat bees? I want to know something about their honey-gathering quality, gentleness, color, etc. KENTUCKY.

ANSWERS.—1. Hard to tell what happened to the queen. Sometimes a queen is accidentally killed when a hive is opened. It is barely possible that she died of old age and that a young queen was present, even if you failed to find her. It will be better for the colony to have a queen this fall than next spring.

2. There is probably some caramel in brown sugar, and that is not good for bees.

3. It will be a good thing to unite the two colonies. Either hive may be set over the other. Perhaps it will be better to put the weaker colony over the stronger. Put a sheet of newspaper between the two. They will gnaw away the paper and unite slowly, thus making them unite peaceably without endangering the queen.

4. Not likely, as brood-rearing ceases in the fall.

5. I have had no experience with them, and they are not much known.

Feeding Honey in Sections—Putting on Supers—Foundation Splints

1. I have some honey in 1-pound sections which is not capped, and I would like to feed it to the bees this fall if it is not too late, or else wait till spring. How can I feed it?

2. When you put on supers for comb honey in spring, do you put on two, or wait till one is filled or partly so, and put one more on top, or put the empty super under the filled or partly filled super? Would you put on more than two?

3. In the October American Bee Journal you advise in question No. 2, page 340, using foundation splints. I have looked through the G. B. Lewis Co.'s catalog, but fail to find them. Where can I get them? and how are they used. IOWA.

ANSWERS.—1. The best way to get such sections emptied is to set them out in the open where all the bees can get at them. If there are a good many—something like a super for each colony that will be engaged upon them—the supers should be left all open so that the bees can get at them freely. If, however, only a small number of sections are thus exposed, the bees will tear the combs to pieces. So, if the number is comparatively small, the sections must be covered up, and an entrance allowed for only a bee or two at a time. It is now too late to get them emptied this fall, although there is a bare possibility that something might be done if there should come an unusual warm spell. If you keep the sections over winter, there is every danger that the honey in them will be candied, and it is the general belief that the bees will not clean them out so clean but some of the granules will be left in, and that the granules will injuriously affect any honey that may be afterward stored in them. However, so good an authority as G. M. Doolittle insists that if sections with a little honey in them that has been left over be given to the bees, they will clean them out properly before storing any more in them. If you can keep the sections through the winter in a rather warm place, it may be that the honey in them will not granulate at all.

2. I don't put on supers "in spring," but wait till I see the first clover bloom. Then only one super is given, and a second one is put under it when the first is about half filled. When the second is about half filled a third is put under it, and as fast as the last super given is about half filled another empty one is put under it. As fast as any super has all of its sections completed except the corner ones, it is taken off. In a good season there will generally be 3 or 4 supers on a hive before any are taken off, and in a few cases as high as 7 supers may be on a hive at the same time. This matter is very fully treated in the book "Forty Years Among the Bees."

3. I'm not sure that foundation splints are listed in any catalog as yet, although they probably will be in the forthcoming catalogs, as thousands of them have been sold during the past year. You can, however, probably get them from any dealer. The splints are boiled in wax, and then pressed vertically into the foundation. At least one supply manufacturing house sends out with the splints directions for using them, and the subject is very fully treated in "Forty Years Among the Bees."

A Beginner's Bunch of Questions

1. Which do you consider the most profitable—comb or extracted honey?

2. How many colonies of bees could I handle on a 10-acre fruit farm? I raise some buckwheat and red raspberries, also alsike.

3. How far will bees go for nectar?

4. Do you consider alfalfa good for honey?

5. How many sections of honey will a colony store in a good season?

6. Please explain the Texas method of having comb honey in jars?

7. What is a good preventive for moths?

8. Should bees be stored away in cold weather. Give best method to store.

9. What makes the best smoke for smokers? Would you advise tobacco?

10. What do you consider the best State for honey-production?

11. Do you think it a good plan to unite 2 weak colonies into one?

12. What do you think about shaking bees to make them work better?

13. What is the best remedy for bee-stings? Why do they affect some people more than others? My brother and myself were taking off honey today. He was stung three times, and the places swelled scarcely at all. I was stung twice, and broke out all over in small bumps, and I seem to feel the poison go all through my veins. What would you advise me to use? NEW BEGINNER.

ANSWERS.—1. I think comb honey is most profitable for me; but don't know for certain, as I haven't had enough experience of late years with extracted honey to judge fairly. But what is most profitable for me in this locality does not decide what would be best for me elsewhere. Also in this locality some other bee-keeper might find more profit in extracted honey. What is most profitable for you can perhaps only be determined by yourself.

2. If they have nothing but that 10 acres to gather from, perhaps 10 colonies, perhaps more. Depends upon the amount of buckwheat and alsike. Fruit-bloom comes early and is valuable for building up, but worth little for a crop, because colonies at that time are too weak to store surplus.

3. I don't know. At least 1½ miles, likely 2 miles, and possibly 5, under stress.

4. Very valuable west of the Mississippi; probably worth little or nothing in your region.

5. That varies greatly. I once got 300 sections from one colony, but the season and the colony were exceptional. If you average 50 in a good season you're not doing so poorly.

6. I suppose you refer to the bulk comb honey produced in Texas. Get honey filled in frames, cut out the comb, pack it in jars or cans, and fill up the interstices with extracted honey.

7. Nothing so good as a *strong* colony, although Italians will keep moths at bay even when quite weak.

8. In the South they are better left outdoors, in the North put in the cellar, although some prefer to leave them out in the North.

9. There is not much difference in results; use whatever is handiest, only don't use tobacco.

10. Hard to tell. New York, Wisconsin, Michigan, Illinois, California, Texas are all good, and perhaps some others just as good.

11. Depends upon circumstances. Good late in the year; might be bad policy in spring.

12. Some good men believe in it, but I have my doubts.

13. Perhaps there is no better remedy than mud, promptly applied. Bee-keepers as a rule take little stock in any remedy. Get the sting out as quickly as possible by scraping it out with the finger-nail, and get busy at something else so as not to think about it. If you try to pull out the sting with thumb and finger, you squeeze more poison into the wound, for the poison-sac is generally left with the sting. I don't know why the effect is different on different people. Some may be more sensitive in general than others. After you have been stung more, the effect will grow less.

Italianizing Black Bees

1. I have been keeping bees only about 2 years, and as I am not very well experienced along this line of business, I will have to call upon you for a little more information. I have 2 colonies of full-blooded Italians, and 21 colonies of black bees, and, with my short acquaintance with Italians, I find that they are far ahead of black bees. I received the 2 yellow queens the first of June, 1909, and introduced them in 2 of the weakest colonies that I had, because I could find the black queens more easily where there were fewer bees. They began to build up at once and stored more surplus than any of the black bees, and up to Oct. 10 they were clustering out, while not a black bee was clustering out. My black bees are also hard to keep strong. A lot of the black queens were lost in mating this fall. They were slow about laying, and, in fact, they are hard bees to get up to where they should be to gather surplus honey. There has never been a bee-keeper in this part of the State that has ever been able to make it pay, but I think this is due to their not knowing how to handle bees in an up-to-date way, and also due to having the wrong kind of bees. We have plenty of white clover here blooming 2 months, and also plenty of asters and goldenrod, and I think the failure of bee-keeping here lies in the fault of the management and the kind of bees, don't you? Now, I want to get rid of my black bees by introducing Italian queens just as early next spring as possible. How early can I introduce them with safety?

2. How soon in the spring are queen-breeders ready for mailing tested queens?

3. I am going to try rearing a few queens next season to supersede all that are not good, and as there are plenty of black bees all around me, how can I get my queens mated with my yellow drones?

4. If I can get the nuclei containing the queens I want mated, together with 2 or 3 colonies of yellow drones, say for instance ½ mile from where there is an apiary of black bees, would all my queens mate with my yellow drones as they left the nuclei, or

More Poultry Secrets Disclosed !

We now offer to all poultry-raisers, men and women, the ninth edition of "Poultry Secrets," containing more of the essential knowledge and secret methods of the most successful poultrymen of America. As a rule these secrets have been guarded with extreme care, for it is upon them that the great successes have been built. They have cost years of labor and thousands of dollars. They will cost YOU only a trifle and a few minutes to write us. Do not hesitate; no confidence has been violated; every secret has been

Obtained in an Honorable Way

(1) by outright purchase; (2) by free permission given our poultry editor, Michael K. Boyer; (3) by collecting old, valuable, but little known methods; (4) from Mr. Boyer's own 30 years' experience. A large amount of new material, never before published, has been added to this new (9th) edition; no poultry owner should attempt to care for his stock without knowing these secret methods and discoveries.

Dr. Woods' Egg Food Secret.

Dr. P. T. Woods authorizes the publication of his system for producing large quantities of sterile eggs for market. Every poultryman who raises eggs for market must know Dr. Woods' method to be up to the times, and every householder who supplies only his or her own table will appreciate an increased quantity of the highest quality eggs for table use.

Secret of Fertile Eggs.

Boyer's secret of securing fertile eggs by alternating males we believe is worth $100 to any big producer of eggs for hatching, either for his own incubators or selling to others for fancy stock. It is something new, and the diagrammatic illustration furnished by Mr. Boyer makes the matter so plain that the novice can easily understand it. This system is already practiced or about to be introduced in many of the largest plants in the country.

Curtiss' Pullet Secret.

For many poultry raisers every cockerel hatched takes the place of a profitable pullet and is accordingly unwelcome. W. R. Curtiss, head of the great Niagara Farm of 100,000 fowls, tells how by his method it is possible to control and increase the proportion of pullets in every hatch. This is of enormous significance.

The Secret of Feed at 15c a Bushel

An enterprising poultryman has been advertising this secret for $5.00 and pledging those who buy it not to disclose it to any one else; it has, however, long been known to a few poultrymen, Mr. Boyer among them, and the method is fully explained in "Poultry Secrets."

Here are a Few More of the Secrets.

Secret of the Philo System.
Woods' Secret of Laying Food.
Proctor's Salt Secret.
Mendel's Chart of Heredity.
Truslow's Secret of High Duck Prices
Gowell's Fattening Secret.
Brackenbury's Secret of Scalded Oats.
Woods' Secret of Saving Weak Incubator Chicks.
Secret of Telling Age of Poultry.
Drevenstedt's Secret of Conditioning Fowls for Exhibiting.
Secret of the Hogan and Palmer System.
Prof. Crane's Secret of Storing Eggs.
Zimmer's Secret of Securing Foster Mothers.
Judge Brown's Secret of Preserving Eggs.
Gray's Secret of Fattening Broilers.
Marshall's Training Show Birds.
Davis' Secret of Raising Every Chick.
Borwell's Method of Feeling Eggs.
Greiner's Corn Feeding Secrets.
Prof. Rice's Fat Hen Secret.

So-Called Systems Explained.

A number of "systems" and secret recipes have been and still are sold at high prices. Some are good, but not new; some are new, but of little value. Some are worth the money paid for them. "Poultry Secrets" give the facts.

Selecting the Laying Hens.

Since the production of eggs is the very basis of the poultry industry, the ability to tell the laying hens in the flock quickly, without the aid of trap-nests, will put dollars in your pocket. Do not keep on feeding the robber hens.

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would they be as liable to meet the black drones?

5. I can sell all the surplus honey that my bees produce, to my neighbors, and they would just as soon have chunk comb honey as to have it in sections, so wouldn't it pay me to have shallow frames in my supers instead of sections?

6. If I should use shallow frames instead of sections, would there be any way of keeping the queen from laying in them without using queen-excluders over the brood-chamber?

7. Are queen-excluders under supers any disadvantage to bees storing in supers?

8. Early next spring, before swarming time, if I catch a warm day when bees are flying, can I open the hives and take out the black queens and put in the yellow ones with safety?

9. I want if possible to get the yellow queens introduced before there is any drone-brood started by black queens. How soon would I have to Italianize next spring to do this? KENTUCKY.

ANSWERS.—1. With good bees, a good bee-book and bee-paper, I see no reason why an intelligent bee-keeper ought not to make bee-keeping profitable.

Introduction will be safer after the bees get to gathering busily, whatever time that may be.

2. In the South I think they can ship in March tested queens of the previous year.

3. Doubtful if you can entirely succeed at it. The best you can do is to take your chances of having at least a few purely fertilized. To be sure, you can cut out all drone-comb in the hives of the black colonies, and allow a liberal amount for the Italians, but there are the black bees all around you in your neighbors' hives. Some claim to have succeeded by putting the hive with the virgin queen in the cellar, also the hive with Italian drones, taking them out after drones have ceased flying for the day, and then feeding them so as to induce flight.

4. Opinions differ. Some think a drone and a queen may meet even when they live 4 miles or farther apart; others think that if drones are plenty within half a mile the queen is not likely to meet a drone from farther away.

5. Certainly.

6. I don't know of any way.

7. It is hardly likely that the hindrance amounts to much.

8. It wouldn't be so safe as to wait till the bees are busy gathering.

9. Drone-brood is likely to be started as soon as the bees are gathering, say for 10 days or so in succession.

Reports and Experiences

Honey Crop a Failure

We have 200 colonies in 8-frame hives. But the honey crop this year was a failure. Our bees have plenty of honey to winter on.

Prairie, Miss., Oct. 20. LEE LANTZ.

Light Honey Crop

The honey crop has been light, with some honey-dew. Bees are in good shape for winter. Clover looks promising for next year. E. L. HALL.

St. Joseph, Mich., Oct. 15.

Poorest Honey Season in Years

This has been the poorest year we have ever had here. No good honey, and a very little, such as it is. Bees were very ugly all summer. They have not enough stores for winter. I could not open the hives to feed without getting into trouble at once.

Plum City, Wis., Oct. 22. F. C. SMITH.

Satisfied With His Bees

I have had pretty good success this year, and like to work with bees very much. I wintered my only colony through safely, and last spring bought 2 more, so that made me 3 colonies to start with. One of these swarmed twice and the other two once each, but my very first swarm got away. I shook them on a sheet in front of the hive, but I couldn't get them to go in, so when the next one came out I shook them into an empty hive-body and put a sheet of zinc over them to keep them in. I then set the hive to receive them over the zinc, and, of course, the bees went up in all right. I left the empty body under for 48 hours and then took it out and set the one with the frames in on the bottom-board. The empty body gives the new swarm lots of fresh air, and they are not apt to abscond. I saved my other 3 swarms all right this way. Two of them stored 32 pounds of honey each, and one of the old ones swarmed once and filled 60 sections of honey. Now I think that is pretty good. All together, I had about 125 pounds of honey. I like to work with bees very much. I now have 6 colonies.

R. R. VICTOR TIPPETT.

Quays, Ont., Oct. 11.

Light Honey Crop

My honey crop is light this year, 3500 pounds, mostly in sections, but it is of excellent quality and flavor. All the bee-keepers in this part of the country that I have heard of did not do nearly so well.

HERMAN L. GLOEGE.

Monroe, Wis., Oct. 16.

Fair Honey Season

The season here in the Shenandoah Valley was fair, but much honey-dew. My crop was 2 tons of comb honey from 64 colonies, spring count, with 91 colonies Sept. 1.

There was very little fall flow from aster, which generally gives us plenty of winter stores; but we are too dry this time.

Winchester, Va., Oct. 11. JNO. I. COE.

A Hard Year for Bees

This has been a very poor year for the bee-keeper. I got only about 300 pounds of honey from 36 colonies, and had only 2 swarms. It was too wet in the spring and too dry in the fall. I think the bees have enough in the hives to winter well, so we will hope for better times next year.

LUDWIG BRENDLE.

Linville, Ark., Oct. 15.

A Discouraging Bee-Season

I have packed my bees for the winter. I got scarcely any honey at all. They did no good on the goldenrod. The wax-moth has destroyed a great many bees here this year. I have thrown away 6 colonies myself, and my neighbors have thrown away a lot. My bees have to be fed, as they have very little to live on, I think. R. B. PERRY.

Greenfield, Tenn., Oct. 18.

Successful Honey Season

I have had a very successful year. From 36 colonies, spring count, I have taken 4500 pounds of extracted honey, and increased to 66 colonies.

I want to tell how I appreciate the American Bee Journal, as I consider the success with my bees is from what I have learned from reading the different writings in it.

EDWARD T. KNOLL.

Clarksburg, Ont., Oct. 11.

Marketing Honey, Etc.

Last year, with a heavy crop of excellent honey all through the middle States, some bee-keepers were induced to sell their fine extracted honey to dealers for a net price of 5 cents or less per pound. I advised against this, and said that I would hold what I could not sell for 8 cents or dump it. I did hold some of it, and now with a short crop in the same territory, I cannot fill my orders at my price of $5 per can of 5 gallons of this same honey. What do you think now, those of you who let your honey go last year for about 5 cents?

Bee-keepers must have confidence in their business, and not get scared and sell out to the sharks as soon as they get a good crop. Remember, a shortage will come, and your honey will be in demand. Besides, if you hold your honey for a fair figure, those who want honey will buy it at the price. It is the cheapest commodity that is turned off the farm today.

I would like to give notice through the American Bee Journal that we have sold our bee-keeper's home and apiary at Monroe, Wis., to a friend and well-known bee-keeper, Mr. H. H. Moe, of Woodford, Wis. Both Mr. Moe and his wife are graduates of the Wisconsin University, class of 1890. Mr. Moe has had a nice apiary on his farm near Woodford for many years, and is an

Book Notices

By LEWIS EDWIN YORK,

Supt. Public Schools,
MARTINS FERRY, Belmont Co., OHIO.

Why the Chimes Rang—By Raymond Macdonald Alden. Illustrated by Katharine Hayward Greenland. Indianapolis: The Bobbs-Merrill Company. Cloth. 149 pp. Price, 1.25.

This book is one of real merit, appealing to boys and girls from 10 to 15 years of age. The stories are told most charmingly, and the moral lessons are not too deeply covered up. The first of the 11 stories gives its name to the book. This is an ideal Christmas gift.

The Happy Heart Family—By Virginia Gerson. Highly illustrated in colors. New York: Duffield & Company. Half cloth. (8¼x10). Price, $1.25.

Here is a really artistic little treasure of a book for children of the kindergarten and primary school age. It appeals directly to the finest tastes through the eye, the pictures being exceptionally clever and full of meaning.

Hide and Seek in Forest-Land—By Robert W. Chambers. New York: D. Appleton & Company. Cloth. Price, $1.50.

In this book there are 17 chapters beginning with "The Voice of the Woods," and dealing with many forms of animal life. The narratives are told with exquisite touches of vivacity, pathos and human interest. Boys and girls in grammer.school will be more than pleased with the book; they will be deeply interested in the life that it portrays.

"Boy Wanted"—By Nixon Waterman. Illustrated. Chicago: Forbes & Company. Decorated, full cloth. (6x8½.) 134 pp. Price, $1.25.

This is surely a "book of cheerful counsel" that will be read from beginning to end with interest. Delightful short poems are interspersed throughout the 10 chapters of inspiring and helpful counsel. Every boy old enough to read "The American Boy" or "The Youth's Companion" will greatly profit by the reading of this attractive work.

Stories of Brave Dogs—(Retold from St. Nicholas.) Edited by M. H. Carter. New York: The Century Company. Price, 65 cents.

This book of nearly 200 pages contains a fine collection of the best stories of dogs that have shown unusual intelligence, discrimination and attachment to their masters. It is the "brave, devoted side of dog life" that is found here. Any boy or man who loves dogs will find in this book many hours of real satisfaction, and those who know little of dog heroism will be truly awakened to the facts relating to man's closest animal companion.

Wonderful Little Lives—By Julia Augusta Schwartz. Illustrated by Clara E. Atwood. Boston: Little, Brown & Company. Cloth. 251 pp. Price, $1.50.

This book of 10 chapters on animal life tells the stories of the grasshopper, the earthworm, the mosquito, the fly, the bee, the toad, etc. The style of the book is clear and altogether satisfactory; the subject matter wholesome and worth while.

☞ Any of the above books may be ordered through the American Bee Journal, 146 W. Superior St., Chicago, Ill. Send us 60 cents in addition to the price of any book as given, and we will credit your subscription to the American Bee Journal for one year.

enthusiastic and painstaking bee-keeper. His purpose is to enlarge the Monroe apiary and make it his home apiary. This apiary dates back over 35 years, and was purchased by me from the late Al Wolcott, who had occupied the field for 25 years.

My purpose is to enlarge my apiaries at Bridgeport, Wis., unless I make up my mind to go West. If I should do the latter, my objective point would be southeastern New Mexico, among the alfalfa fields and apple orchards. HARRY LATHROP.

Bridgeport, Wis., Oct. 14.

Bait-Sections in Super Center

I agree with the contention that the place for bait-sections is in the center of the super. I have tried them both in the corners and in the center, and will never put any more baits in the corners.

Bees naturally commence work in the center of the supers, and as supers containing baits are generally put on at the season when there are more or less cold days and nights, the heat of the super should be kept where it naturally belongs.

Baits in corners divide the working force too much.

My practise is not to wait for the bees to fill the outside sections, but to remove the super when the central sections are finished, and take out all the finished ones and fill up the super with other unfinished sections, and put on some hive as "go-backs."

Leon, Iowa. EDWIN BEVINS.

Colorado State Convention

The annual meeting of the Colorado State Bee-Keepers' Association will be held Tuesday and Wednesday, Dec. 7 and 8, 1909, in the Senate Chamber of the State Capitol, Denver, Colo. N. L. HENTHORNE, *Sec.*

Platteville, Colo.

Northern Michigan Convention

The Northern Michigan Bee-Keepers' Association will hold its next National convention at Mancelona, Mich., Wednesday and Thursday, Dec. 1 and 2, 1909. All interested in bee-culture and its advancement should attend. We will have a good and profitable meeting. Try to be there.

IRA D. BARTLETT, *Sec.*, E. Jordan, Mich.
E. D. TOWNSEND, *Pres.*, Remus, Mich.

Illinois State Convention

The 19th annual convention of the Illinois State Bee-Keepers' Association will be held in Room 17, of the State House, at Springfield, Ill., Nov. 18 and 19, 1909. The headquarters will be at the Normandie Hotel, at a rate of $1.25 a day—the only hotel in the city that has no bar. On account of the I. O. O. F. meeting the same week, most of the railroads in this State will give a fare and a half for the round trip. Ask your railroad agent the week before what his instructions are, and by that time he will know.

Because of the death of Pres. J. Q. Smith, our first vice-president, A. L. Kildow, will preside.

Dr. G. Bohrer, of Lyons, Kans., C. P. Dadant, of Hamilton, Ill., George W. York, Editor of the American Bee Journal, and we hope also Dr. C. C. Miller, of Marengo, Ill., will be present and on the program. As our membership is the largest in the history of the Association, we can reasonably expect a good meeting—because we have no other kind. It is quite important that all bee-keepers have a vote for President and for foul brood inspector, which we recommend to be filled by two persons instead of one as heretofore. When our late President, J. Q. Smith, was appointed inspector in the first place, we looked all around before we found one who would consent. This difficulty will not happen now. We feel that the welfare of our Association hangs largely on the question of who fills the offices of President and foul brood inspector, next to and equal with the Executive Committee.

Come and help make this annual convention a good one. JAS. A. STONE, *Sec.*

Route 4, Springfield, Ill.

Chicago-Northwestern Convention Dec. 1 and 2

As announced in the October American Bee Journal, the next meeting of the Chicago-Northwestern Bee-Keepers' Association will be held Wednesday and Thursday, Dec. 1 and 2, 1909, at the Briggs House, Chicago, northeast corner of Fifth Ave. and Randolph St. Judging from the letters the President and Secretary have received from leading bee-keepers all over the country, this is going to be the largest and best convention held in America this year. The indications are that there will be more leading bee-keepers present than there were at the National Convention at Sioux City in September. The Chicago-Northwestern meeting comes at a time when bee-keepers can more easily get away from home for a few days.

Among those who have written that they expect to be present, or will be represented by papers, are the following: Dr. C. C. Miller, Miss Emma Wilson, C. P. Dadant, F. Wilcox, Geo. E. Hilton, Morley Pettit, R. A. Morgan, W. Z. Hutchinson, J. J. Wilder, Ernest R. Root, N. E. France, M. E. Darby, Mrs. H. K. Beard, etc. It is expected that there will be, in addition to the usual very helpful question-box discussions, many short papers on subjects that are of deep interest to bee-keepers. This will help to start discussions that are bound to draw out much information that will be invaluable to those who are present. We hope it may prove to be a regular bee-keepers' rally. There are a great many bee-keepers who like to visit Chicago at least once a year, and this is a good time for them to come.

Don't forget the time and place of meeting—Dec. 1 and 2, at the Briggs House, Chicago. The first session will begin at 10:30 a.m., Wednesday, Dec. 1. Come and help make it a large and profitable convention of bee-keepers.

An Orphanage Appeal for Help.—The Editor of the American Bee Journal is the secretary of the board of trustees of an orphanage or children's home located at Lake Bluff, Ill., 30 miles north of Chicago. He has wondered if there were not quite a number of the benevolently inclined among the readers of the American Bee Journal who would like to send to that orphanage something either to eat or to wear, or even money, for the 135 children cared for there. They are all the way in size and age from infants to 12 years. The way to do is to ship by freight, *always* prepaying the charges. Perhaps we might suggest vegetables, extracted honey, oats and corn (they have a horse), clothing (new, or good second-hand), etc. Any mother will know just what boys and girls 12 years or under will need to wear or to eat. It is the most economically managed institution of the kind that we know anything about. Many of the children there are for adoption. If you feel that you can, or would like to help such a worthy cause, send what you can spare from your abundance to Lucy J. Judson, Supt., Lake Bluff Orphanage, Lake Bluff, Ill., and please don't forget to prepay charges on what you ship. Also put your name and address on each package, and, if you like, write a letter to accompany it, either in the package or by mail. If you desire more particulars, write the superintendent.

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" American Poultry World..	.50	1.15
" American Sheep Breeder.	1.00	1.60
" Breeders' Gazette..........	1.75	2.20
" Canadian Bee Journal.....	1.00	1.60
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VOL. V

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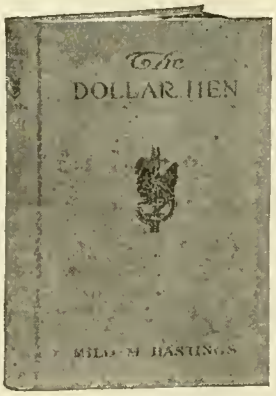

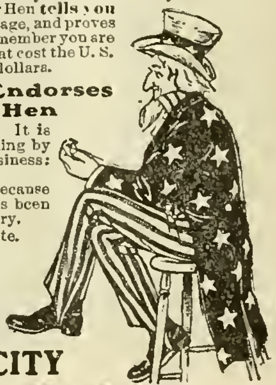

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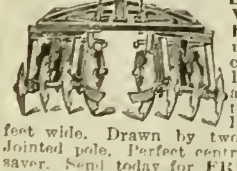

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How about that old, played-out Queen? Now is the time to replace her, or make increase. Try the famous BANATS and CARNIOLANS. 75 cts each; $8.00 per doz.

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Untested, 75c each. Reared from imported queens. Price-list free. 5A7t

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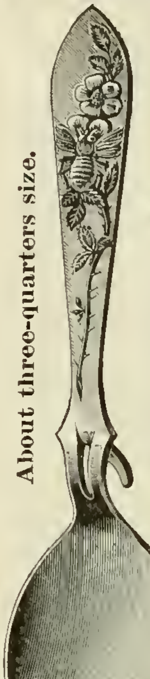
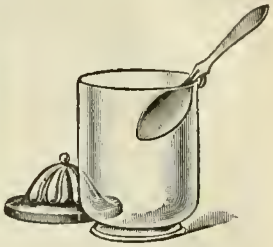
An English Honey-Spoon


About three-quarters size.



Over in old England they have a handy honey-spoon, or at least a spoon that has a device in its handle that will prevent it from dropping down in the jar of honey on the dining-table, thus soiling the fingers and spoiling the table-cloth. It is a very ingenious idea, and should have extensive demand among honey-consumers, especially bee-keepers. It is well plated on high-class nickel, and has a beautiful raised design on the upper side of the handle, as indicated in the picture herewith. We have secured some of these very unique spoons, and will mail them at 90 cents each. Or, we will send spoon and the American Bee Journal one year—both for $1.50.

The spoon would be fine as a gift for Christmas, birthdays, etc.

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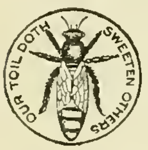
These are very pretty things for bee-keepers or honey-sellers to wear on their coat-lapels. They often serve to introduce the subject of honey, which might frequently lead to a sale.

NOTE.—One bee-keeper writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of these buttons], as it will cause people to ask questions about the busy bee, and many a conversation thus started wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."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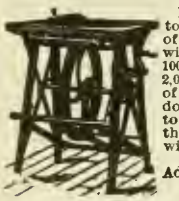

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Humphrey, Amboe Street Factory, Joliet, Ill.

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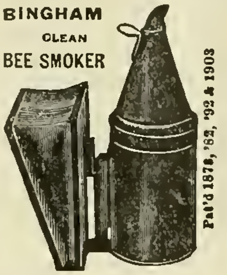

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For some time we have been considering the increase of the yearly subscription price of the American Bee Journal from 75 cents a year to $1.00. In fact, many of our best subscribers have written us that it really never should have been reduced in price, in view of the richness of its contents and general helpfulness to its readers. But among the real reasons for such increase are the greater cost of its production, and that the present price of 75c is, and has been, too low to maintain the "old reliable" American Bee Journal at its present high standard of excellence. And, surely, no reader would want us to lower that standard in any particular.

We may say further that we are planning certain improvements that will increase greatly the cost of publishing the American Bee Journal another year—improvements that will more than offset the small increase of 25 cents a year in subscription price—even contemplating a 48-page Journal, if possible to do it. The Editor is now devoting **all** of his time to the Bee Journal, which fact alone should tend to make it more valuable as the months pass on.

Nearly Two Months Before the Raise in Price is to Go into Effect

But it will be noticed that the $1.00 price does not become effective until Jan. 1st next, or nearly 2 months yet. And during the time intervening we are going to allow all who wish to do so, to pay their subscriptions **two years in advance at the present 75-cent rate.** That is, you can pay all back dues (if any) and for all of 1910 and 1911 at 75 cents a year. So, really, there will be no raise in price for over 2 years to all who pay their subscriptions **before next Jan. 1.**

Save 50 Cents by Subscribing Before Jan. 1st

By paying subscriptions for 1910 and 1911 any time between now and the end of this year (1909), you will save just 25 cents a year, or 50 cents. But we cannot allow subscriptions to be paid beyond the year 1911 at the present 75-cent rate. Please tell your neighbor bee-keepers about this, so that they, too, can take advantage of the special offer for 2 years beyond 1909.

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You are Invited to Help Increase the Bee Journal Subscription List

We offer many liberal premiums for getting **new** subscriptions for the American Bee Journal. We hope our readers will do what they can to get their bee-keeping neighbors to subscribe, and thus earn some of the premiums we offer. Let us work together for each other's interest and advancement, and for the good of bee-keepers everywhere.

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Choice, well-ripened Extracted—clear, light golden color and delicious flavor—7¾ to 8c. Sample 6c, deducted from order.

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HONEY

For Sale—Amber or Buckwheat Comb, 24 sections, in glass-front case, $2.75 per case, 25 cases at $2.60; 50 cases at $2.50 per case. Unfinished Sections at $8 per 100. Will pack honey in straw carriers and guarantee safe arrival.

QUIRIN-THE-QUEEN-BREEDER,
Bellevue, Ohio.

Please mention Am. Bee Journal when writing.

For Sale WHITE CLOVER HONEY

Simply delicious—at 10c per lb., f. o. b. Seneca, Ill. In crates of two 60-lb. cans each. Sample 10c.

11A2 **A. J. Diebold, Seneca, Ill.**

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FOR SALE

We have several hundred Cases of good Second-Hand Cans, two in a case, used only once with White Honey—

10 Cases or over	40c per Case.
25 " " "	35c " "
100 " " "	30c " "

Speak Quick. F. O. B. TOLEDO, OHIO.
24 North Erie St.,
11Atf **THE GRIGGS BROS. CO.**

Please mention Am. Bee Journal when writing.

I have for sale a lot of

White Clover Extracted Honey

well ripened and of finest flavor, in 60-lb. cans. Price, f. o. b., one can 9 cents per lb.; 2 cans or more, 8½ cents per lb.

Edwin Bevins, Rt. 2, Leon, Iowa.

Please mention Am. Bee Journal when writing.

HONEY FOR SALE

By members of the Michigan Bee-Keepers' Association. For free annual booklet giving names and addresses of members, address the Secretary, 7Atf

E. B. TYRRELL,
230 Woodland Ave., Detroit, Mich.

Wanted—White Honey.

State kind, how put up, and lowest cash price.

CHAS. KOEPPEN, 1508 Main St.,
9Atf FREDERICKSBURG, VA.

Honey Brokers: We offer a car water-white Sage, 6⅙ cts.; car lt. amber, 5⅝ cts. per lb.

11A2t **Freeman & Fairchild, Redlands, Cal.**

Please mention Am. Bee Journal when writing.

CYPRIAN, Carniolan, Caucasian, Italian Queens Select untested, $1.00. Select tested, $2.00. Bees $8 colony. Supplies and Honey. 6A1y
W. C. MORRIS, Nepperhan Hts., Yonkers, N. Y.

Please mention Am. Bee Journal when writing.

FALCON FOUNDATION

Years of experience in the manufacture of

FALCON COMB FOUNDATION

have made it PERFECT.

Bees like it, and the foremost

Honey-Producers Use It.

It helps materially to increase the

Honey Crop

(Send for our new Catalog.)

Ship us your

BEESWAX

to FALCONER, N. Y.

Will send shipping-tags, when you write asking for quotations.

We pay highest market prices.

W. T. FALCONER MFG. CO.

JAMESTOWN, N. Y.

Please mention Am. Bee Journal when writing.

Headquarters for Bee-Supplies

ROOT'S GOODS — At Root's Factory Prices

HONEY! HONEY!

If you are in want of EXTRACTED or COMB HONEY, we will be pleased to quote you, as we have several cars of California honey in stock. Write to-day for prices and samples.

If you have any Honey to offer, state kind it is, how it is put up, and lowest price you expect for same, delivered in Cincinnati.

C. H. W. WEBER CINCINNATI ...OHIO...

Office and Salesrooms, 2146-48 Central Ave. Warehouses, Freeman and Central Aves.

Honey and Beeswax

CHICAGO, Oct. 27.—October has given us good trade in honey of all kinds, and stocks are low on the market at this time. Prices remain for A No. 1 to fancy 15@16c, with the other grades from 1@3c less. Extracted white ranges from 7@8c, according to kind, quality, and flavor, and amber grades are 6@7c. Beeswax is in active demand at 30@32c per pound, according to cleanliness and color. R. A. BURNETT & CO.

CINCINNATI, Oct. 26.—The market on comb honey is exceedingly brisk. In quantities of from 100 to 200 cases it is selling at 14½c; retail it is selling at 16c. Extracted table honey is brisk. Sage at 8½@9c; amber in barrels, fair demand, at 6@6½c. Beeswax is slow at $33 per 100 lbs. The above are our selling prices, not what we are paying.
C. H. W. WEBER & CO.

INDIANAPOLIS, Oct. 26.—There is a good demand for best grades of honey, but the market is now well supplied. Indiana bee-keepers, as well as merchants, are good buyers. Producers are being paid the following prices: Fancy white comb, 16c; No. 1 white, 14c. Finest extracted in 5-gallon cans, 8c. No demand for amber or off grades. Producers of beeswax are receiving 28@30c. WALTER S. POUDER.

BOSTON, Oct. 18.—Fancy white comb honey at 16@17c; No. 1, 15@16c. White, extracted, 8@9c, light amber, 7@8c; amber, 6@7c. Beeswax, 30@32c. BLAKE, LEE CO.

NEW YORK, Oct. 28.—The demand is good for all grades of comb honey, especially so for No. 1 and fancy white stock. While receipts are not quite as heavy as in former years, they are sufficient to meet the demand. We quote: Fancy white, 15c; No. 1, 14c, No. 2, 13c; amber and mixed, 11@12c. Beeswax, 11@13c, according to quality. Strictly fancy lots in a small way bring a little more than these prices. Demand is good for extracted, and receipts are quite heavy, especially from California. Quality we never saw better. We quote: Water-white sage, 8½c; white sage, 8c; light amber, 7@7½c; amber, 6@6½c; clover and basswood, 8@8½c; dark and buckwheat, 7@7½c; Southern, in barrels, 65@75c per gallon. Beeswax is dull and quiet at 28@29c, according to quality.
HILDRETH & SEGELKEN.

KANSAS CITY, MO., Oct. 26.—The supply of comb honey is much larger; demand fair; the receipts of extracted fair; demand not heavy. We quote: No. 1 white comb honey, 24 sections, $3.10 to $3.25; No. 2 white and amber, 24 sections, $3.00. Extracted, white, per pound, 7c. Beeswax, 25@30c.
C. C. CLEMONS PRODUCE CO.

PHILADELPHIA, Oct. 22.—The demand for comb and extracted honey has been very heavy in the last 10 days. Large lots have been moved at good figures. There has also been quite a little honey shipped in, which contains a shade of honey-dew, which has been selling at a low price. We quote: Fancy white, 16@18c; No. 1, 14c; amber, 13c. Extracted, white, in 5-gal. cans, 9c; amber, in barrels, 6c; amber, in cans, 7c. Beeswax, 29c. WM. A. SELSER.

TOLEDO, Oct. 26.—The market on comb honey is somewhat firmer than our last quotations. Fancy and No. 1 white clover is bringing from 16@17c in a retail way. Not much call for amber. Buckwheat honey, well filled, is bringing 14c. California water-white sage, 9c; clover, 7½@8½c according to the quality; amber honeys a little less. Beeswax 26@30c.

We do not look for honey to go any higher as the prices are about to their limit, and we advise all those having honey to sell, to market it promptly. THE GRIGGS BROS. CO.

ZANESVILLE, OHIO, Oct. 27.—There is a good average demand for best grades of honey. There have been some arrivals of Western honey, but prices remain firm. For white clover comb grading No. 1 to fancy, producers would receive from the jobbing trade 14@16c delivered here. Such honey goes to the retail grocery trade at 2@2½c advance over these prices. The chief demand for extracted honey on this market is in small retail packages. Pound jars go to the retail trade at $2.25 per dozen; 6 ounce size, 90c. For best white clover or raspberry extracted the jobbing trade is offering 8½c delivered, selling at an advance of 1c@1½c. Good yellow beeswax brings on arrival 28c cash, 30c in trade. EDMUND W. PEIRCE.

Western Bee-Keepers We Will Show You how to save money. Send for our new catalog of the best Bee-ware made.

THE COLORADO HONEY-PRODUCERS' ASS'N, Denver, Colo.

We will Buy and Sell

HONEY

of the different grades and kinds. If you have any to dispose of, or if you intend to buy, correspond with us.

We are always in the market for

Beeswax

at highest market prices.

Hildreth & Segelken

265 & 267 Greenwich Street
NEW YORK, N. Y.

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How About Your Advertising?

Have you anything to sell? Any bees, honey, hives, or anything else that you think the readers of the American Bee Journal might want to buy? If so, why not offer it through our advertising columns? See rates in the first column of the second page of every number of the Bee Journal. We try to keep our columns clean and free from any dishonest advertising. Such cannot get in, if we know it. We want the patronage of just as many clean, straight, square-dealing advertisers as we can secure.

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BEE-KEEPERS OF THE WEST

BEE-KEEPERS OF THE EAST

Be Sure to get our PRICES on

BEESWAX

Before selling your season's Wax
or
Let us send to you our prices for
Working your Wax into

DADANT'S
FOUNDATION

Many large Honey-Producers prefer our Foundation to other makes, because the bees like it best.

We can use almost an unlimited quantity of BEESWAX, and we are buying at all times of the year **at highest cash prices.**

During the season of 1909 we handled over 150,000 pounds of Beeswax.

If your Honey supply is short we can supply you with either

White or Amber Extracted Honey.

SEND FOR PRICES AT ONCE.

HONEY

If your WHITE CLOVER crop is short and you want some good Honey to supply your customers we can offer you

White
Alfalfa
Honey

at the following prices:

1	60-pound Can	10c per pound
2	60-pound Cans or more	9c per pound
10	60-pound Cans or more	8½c pr pound

This Honey is put up in new, bright Cans, neat and clean, and we can guarantee it in every way.

Sample by mail, 5c to pay for postage.

DADANT & SONS, Hamilton, Illinois.

BEE-KEEPERS OF THE SOUTH

Locations for Bee-Keepers

The Santa Fe Southwest has been declared by experts, to be the greatest Bee Country in the World. Hundreds of locations in New Mexico, Arizona and Southern California are now ready for the man who knows how to take advantage of the opportunities offered.

New irrigation works have been established and the land planted to Oranges, Lemons, Alfalfa, and other honey-yielding plants.

The honey produced is a clear white product of unusual flavor, and there is a steady demand at remunerative prices.

The climate is ideal for both bee-life and honey-making. The honey ripens rapidly and goes to market in perfect condition.

I have a number of illustrated pamphlets descriptive of the country served by the Santa Fe. I will gladly mail you copies on request.

C. L. SEAGRAVES, General Colonization Agent, A. T. & S. F. Ry.,
1115 Railway Exchange Building, CHICAGO, ILL.

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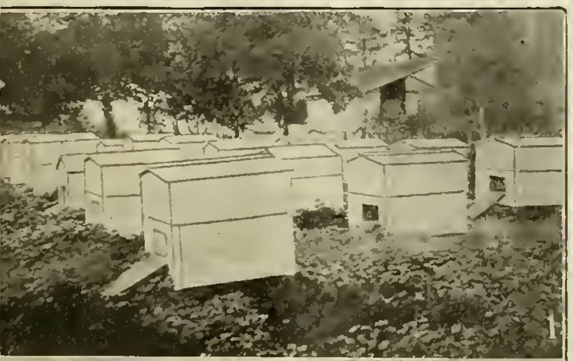
49th Year

No. 12



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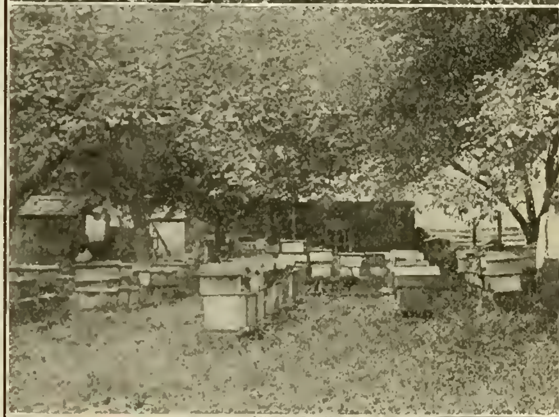

DECEMBER
1909 2

THE AMERICAN BEE JOURNAL.

PUBLISHED MONTHLY BY

GEORGE W. YORK & COMPANY

146 W. Superior St., Chicago, Ill.

IMPORTANT NOTICE.

THE SUBSCRIPTION PRICE of this Journal is 75 cents a year, in the United States of America, (except Chicago, where it is $1.00), and Mexico; in Canada 85 cents; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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Goes to press the 6th of each month.

National Bee-Keepers' Association

Objects of the Association.

1st.—To promote the interests of its members.

2d.—To protect and defend its members in their lawful rights.

3d.—To enforce laws against the adulteration of honey.

Annual Membership Dues, $1.00.

General Manager and Treasurer—
N. E. FRANCE, Platteville, Wis.

☞ If more convenient, Dues may be sent to the publishers of the American Bee Journal.

Books for Bee-Keepers

Have you a good bee-book? Many bee-keepers do not have. And that is where they make a big mistake. A bee-paper cannot take the place of a good bee-book. The paper is a splendid thing to read *in connection with the book*. On another page we make some generous clubbing offers of bee-books with the American Bee Journal.

Swarming Prevented

A new method, just published, worthy of investigation by all progressive bee-keepers. Advantages claimed for the plan of treatment. No clipping of queens' wings—no caging of queens—not even necessary to look for queens; no pinching of queen-cells—no shook swarming—no dividing—no extra expense connected with the plan—plan simple and easy to carry out—satisfactory honey crop—saves time and labor. Send to

Dr. H. JONES, Preston, Minn.,

for his booklet, describing his method of treatment. Price, 25 cts. Process protected by copyright.

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Untested Italian Queen-Bees

Booking Orders for 1910

6 Queens for $4; 3 for $2.10; 1 for 75 cents

A Standard-Bred Italian Queen-Bee

For a number of years we have been sending out to bee-keepers exceptionally fine Untested Italian Queens, purely mated, and all right in every respect. Here is what a few of those who received our Queens have to say about them:

What They Say of Our Queens

GEORGE W. YORK & CO.:—The two queens received of you some time ago are fine. They are good breeders, and the workers are showing up fine. I introduced them among black bees, and the bees are nearly yellow now, and are doing good work. A. W. SWAN.
Nemaha, Co., Kan., July 15, 1905.

✣✣✣

GEORGE W. YORK & CO.:—After importing queens for 15 years you have sent me the best. She keeps 9½ Langstroth frames fully occupied to date and, although I kept the hive well contracted, to force them to swarm they have never built a queen-cell, and will put up 100 pounds of honey if the flow lasts this week. CHAS. MITCHELL.
Ontario, Canada, July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I bought of you has proven a good one, and has given me some of my best colonies. N. P. OGLESBY.
Washington Co., Va., July 22, 1905.

✣✣✣

GEORGE W. YORK & CO.:—The queen I received of you a few days ago came through O.K., and I want to say that she is a beauty. I immediately introduced her into a colony which had been queenless for 20 days. She was accepted by them, and has gone to work nicely. I am highly pleased with her and your promptness in filling my order. My father, who is an old bee-keeper, pronounced her very fine. You will hear from me again when I am in need of something in the bee-line. E. E. McCOLM.
Marion Co., Ill., July 13.

We usually begin mailing Queens in May, and continue thereafter, on the plan of "first come first served." The price of one of our Untested Queens alone is 75 cents, or with the monthly American Bee Journal one year—both for $1.20. Three Queens (without Journal) would be [illegible], or 6 for [illegible]. Full instructions for introducing are sent with each Queen, being printed on the underside of the address-card on the mailing-cage. You cannot do better than to get one or more of our fine Standard-Bred Queens.

George W. York & Co., 146 W. Superior St. Chicago, Ill.

Dittmer's Comb Foundation

Is BEST, not because WE say so, but because in every case where it was tested side by side with other makes, THE BEES PREFERRED IT; and the reason for this is, ITS ABSOLUTE PURITY, of which the BEES ARE THE BEST JUDGES, and which can be obtained only by the use of DITTMER'S PROCESS for CLEANING AND PURIFYING WAX.

Our entire Process is ORIGINAL AND INDEPENDENT, and its entire Success is demonstrated by its EXCLUSIVE USE by thousands of Bee-Keepers in every part of the country, in preference to any other MAKE OR PROCESS.

We make a Specialty of Working your Wax for Cash.

Write us for Prices and Samples, which must be seen to be appreciated. We carry a full line of

Bee-Supplies, Wholesale and Retail,

and will be pleased to mail you our Catalog and Prices. Address,

GUS DITTMER COMPANY,
AUGUSTA, WIS.

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for a Long Time

—you know and acknowledge it's really a necessity—but you have hesitated because of the immediate expense, no doubt.

But now won't you let us tell you how you can start a library in a small way—how you can buy the best standard books at the lowest prices—how you can have the books right in your own home—right in your own library to read and enjoy while paying for them in small monthly payments. Our new catalog explains everything.

Ask for it today.

THE WERNER COMPANY
AKRON, OHIO
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"Scientific Queen-Rearing"

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"It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of modern methods of rearing queens wholesale."

Mr. Doolittle's book also gives his method of producing comb honey, and the care of same; his management of swarming, weak colonies, etc. It is a book of 126 pages, and is mailed at the following prices: Bound in cloth, $1.00; bound in leatherette, 75 cents.

Special Clubbing Offer

We offer a cloth-bound copy of this book with the American Bee Journal one year—both for $1.40; or a copy of the leatherette-bound edition, with the American Bee Journal one year—both for $1.15. The cloth-bound book given free for getting 3 new subscribers at 75c each; or the leatherette-bound copy given for 2 new subscribers.

Every bee-keeper should have a copy of Mr. Doolittle's book, as he is one of the standard authorities of the world on the subject of queen-rearing and everything else connected with bee-keeping and honey-production,

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14¾ Cents a Rod

For 22-In. Hog Fence; 15 3-4c for 26-inch; 18 3-4c for 31-inch; 22c for 34-inch; 25c for a 47-inch Farm Fence. 50-inch Poultry Fence 33c. **Sold on 30 days trial.** 80 rod spool Ideal Barb Wire **$1.55** Catalogue free.

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Humphrey, Ambee Street Factory, Joliet, Ill.

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The Santa Fe Southwest has been declared by experts, to be the greatest Bee Country in the World. Hundreds of locations in New Mexico, Arizona and Southern California are now ready for the man who knows how to take advantage of the opportunities offered.

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I received Farm Journal and "Poultry Secrets," and am very much pleased with both. The secrets are worth their weight in gold. Why, I paid $5.00 for the sprouted oats method. You certainly give a fellow over his money's worth.

ANDREW F. G. MOREY, Utica, N. Y.

I purchased a copy of "Poultry Secrets," and find many helpful ideas in it, especially Dr. Wood's Egg Hatching Secret.

MRS. F. T. DARNELL, Westfield, Ind.

By putting within our reach these Poultry Secrets, you are doing a more philanthropic work than giving alms or endowing hospitals, for you make it possible for us to make both ends meet.

L. BOYCE, Milwaukee, Wis.

Received your book of Poultry Secrets. It's an exceptionally instructive work, and worth $10 to any progressive poultryman. I would not care to take that for my copy if I could not get another.

ROBT. F. KINGSLAND, Montville, N. J.

The Farm Journal came to hand, and later Poultry Secrets also arrived, all of which I was very glad to receive, and have been greatly interested in reading same, and think you are doing a glorious work in diffusing such valuable knowledge for so little money.

F. B. MEADE, Boston, Mass.

As to "Poultry Secrets," I will say I have lectured on this subject over the greater portion of this State for the past 15 years, and have about every book that is published on this subject in my library, and I consider this book of yours the most valuable I know by far for the general public.

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50 PERCENT MORE

Pullets than Cockerels

This is the astonishing result that is secured by W. R. Curtiss, of the famous 100,000-chicken Niagara Farm in New York. He tells how he does it, to his great cash advantage, in the new (9th) edition of "Poultry Secrets," just off the press. Besides this remarkable disclosure, the new edition contains

Scores of Other Secrets

many of them as surprising and even more vital to the modern poultry-keeper's success. A partial list follows:

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In short, the new edition contains the cream of the exclusive knowledge of dozens of America's foremost poultrymen, and should have it if you have even a few hens in a back-yard. Do not hesitate; no confidence has been violated; every secret has been

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It would be absurd to expect every bit of this information to be unknown to every one; we make no such claim. But we believe that the beginner with a few hens, the farmer with his small flock, or the poultryman with his thousands will all find knowledge in this book which is absolutely new to them, and worth many times its cost. We risk our reputation on this.

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"Poultry Secrets" and FARM JOURNAL 5 years, both for only $1.00

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Queens any quantity. Tested, $1.00; Untested, 75c each. 4Atf

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For Sale 40 Acres of Land and 50 Colonies of Bees. The land is all cleared and there is a 4-room house on it. The bees are mostly Italians, in 8-frame dovetailed hives, all painted, with wired Hoffman frames. There are also 40 empty Hives of the same description with all fixtures, and a quantity of Sections. This is in one of the best bee-ranges that can be found. Added to the early flow of maples, willows and dandelions, are sumac, white clover, and some basswood, followed by buckwheat and several hundred acres of goldenrod and asters, with many other wild flowers. A BARGAIN, but will be sold soon. Address, **E. H. JACKSON,**
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Our doubts are traitors,
And make us lose the good we
oft might win
By fearing to attempt.
—Shakespeare.

Bee-Keepers' Supplies.

Sold at reduced prices. Dovetailed Hives, Sections, and everything pertaining to bee-keeping of the **very best** kept in stock. Large Warehouse on of L. S. & M. S. R. R.

Wholesale and Retail. New price-list just out—**Free.** Let me figure on your wants.

11Atf **W. D. Soper, Jackson, Mich.**

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We Have Some Copies Left of the Book

"Bees and Honey"

By Thomas G. Newman

bound in cloth, that we offer cheap to close out. It contains 160 pages, and is bound in cloth. It used to be a one-dollar book, but we will mail them, so long as they last, at 50 cents each; or with the American Bee Journal one year **both for only $1.00.** Surely this is a bargain. The book is well illustrated, and has some good information in it, especially for beginners. Address all orders to

George W. York & Co.,
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This is the only Place in Indiana

Where you can get this Combination—

Prompt Service
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Lewis Beeware

Lewis Wisconsin Hives are winners.

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☞ Our New, Up-to-Date CATALOG will soon be issued.

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12 Hardy Blizzard Belt
Strawberry Plants FREE!

Everybody likes strawberries and to prove that our "BLIZZARD BELT" plants are the strongest rooted and heaviest fruiters, we offer to send ONE DOZEN selected plants to you FREE OF CHARGE. We picked 35 quarts of fine fruit from a test bed of but a dozen strawberry plants set the year before. You can do as well. If you care to send 10 cents for mailing expense, we will add 6 BABY EVERGREENS 2 years old and send all to you at proper planting time. Write to-day and we will enter your name for the plants and send you our CATALOGUE and BARGAIN SHEETS of HARDY "BLIZZARD BELT" fruits by next mail. Address

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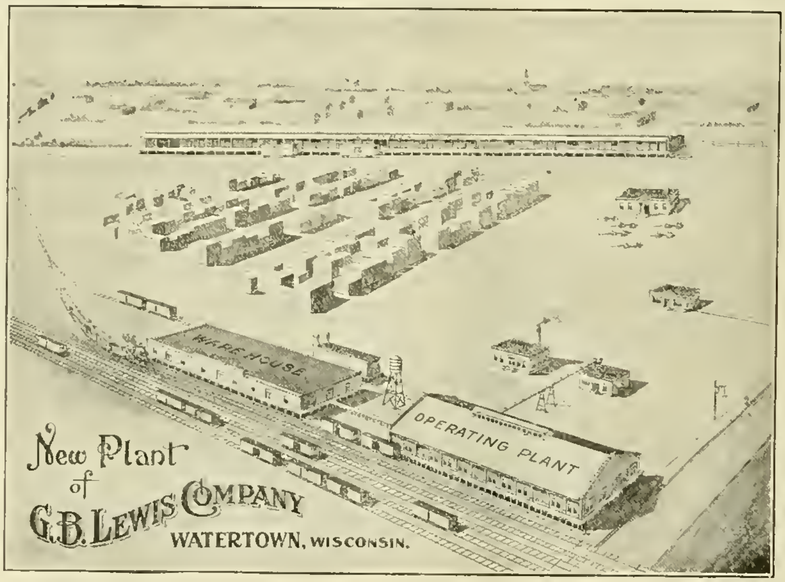

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AMERICAN BEE JOURNAL

L.L. LANGSTROTH
CHAS. DADANT

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Editorial Notes and Comments

Merry Christmas — Happy New Year

The blessed Christmas time will soon be here again—the season of gifts, gladsomeness and joy. "Ye editor" wishes for all the readers of the old American Bee Journal the very merriest Christmas of all their lives.

And then the New Year—**1910**—is only about two weeks away. How rapidly the years come and go. And with them come, oh, so many changes! Dear ones that were with us have been taken away; reverses and losses have come to some; to others the years have brought happiness and prosperity. But the New Year bids us look ahead, and not to regret the past. We need to brace ourselves for the future and its increasing duties. Let us all hope that there may be brighter days just ahead for the discouraged and disheartened; more contentment, peace and cheer for the worried and fretted; and a larger, richer and more successful experience for us all. Again "Ye Editor" has for each and every one—

A New Year's Wish:

"A bright New Year, and a sunny track,
  Along an upward way;
And a song of praise on looking back
  When the year has passed away;
And golden sheaves—nor small, nor few—
This is my New Year's wish for you.'

The Winter Brood-Nest

An interesting discussion is on between Gleanings and The Canadian Bee Journal. Speaking of feeding late to such an extent as to have no empty cells, Gleanings says:

"Such a condition is not according to nature, and one can readily see that a bunch of bees, no matter how large, that is separated by slabs of solid honey or syrup can not keep as warm as where the combs are empty and the bees can crawl into the cells, thus establishing bodily contact heat between several divisions of the bees separated only by the midribs in the combs."

But The Canadian doesn't "readily see" it, and says:

"To our mind it does seem unreasonable to suppose that bees cannot cluster on combs full of honey. We have been laboring under the impression that this was the ideal condition. * * * Bees clustering on empty combs and going off at intervals to feed on cold honey is an idea that is difficult for us to accept."

The question really at issue is whether part of the bees of a good colony in winter enter the empty cells so as to be nearer together to keep warm, or whether, as The Canadian hints, bees only occupy these empty cells when starved to death. If this question be settled in a positive manner one way or the other, the discussion will have served an excellent purpose.

Important Factors in Bee-Keeping

John Silver, in the Irish Bee Journal, quotes W. L. Coggshall as considering "locality to be the first consideration, the man second, the bees third, and the hive fourth." Mr. Silver would place the four factors in the following order of importance: Locality, bees, man, hive. Probably most would agree with these two men in putting locality (or pasturage) at the head of the list, and the hive at the foot. Whether to consider the man or the bees the more important factor is a matter not so easily settled.

The question might be put in this form: Which will bring the better results, a good bee-keeper with a poor strain of bees, or a poor bee-keeper with a good strain of bees? It is plain that before we can have a definite answer we must have some definite notion as to the difference there is between a good and a poor bee-keeper, and also between a good and a poor strain of bees. When we come to deal with the question in that light, we see at once that we are dealing with factors that are varying quantities. There are all grades of bee-keepers, from very good to very poor, and the same may be said of bees. For the sake of having something definite, we might assume that with the same bees a good bee-keeper would get 50 per cent more honey than a poor bee-keeper; also that under the same management a good strain of bees would gather more honey than a poor strain. In that case the good bee-keeper with the poor bees ought to get the same amount of honey as the poor bee-keeper with the good bees.

Looks a little as if the right answer might depend upon whether there is more difference in men or in bees. That may vary in different regions, so it is possible that both Mr. Coggshall and Mr. Silver are right, each one for his own locality.

After all, the important point for the beginner is what he can do to improve one or all of these factors; and very likely his first question will be, "Which one can I do the most to improve?" Improvement of locality is more or less out of the question; the bee-keeper seeks a good location, and then does very little to make it any different. If it is difficult to make any difference in pasturage, it certainly is not difficult to make a difference in hives, and it is nothing unusual for the beginner to think that because it is so easy for him to make something different it is easy to make something better. As he becomes seasoned, however, he wisely concludes that it isn't so easy as he thought to make a better hive than any already made; and so his chance for improvement is limited to improving the bee-keeper and the bees.

Very likely it is of more importance to improve the bee-keeper; and this will be done in every way possible, by close observation and study of books and bee-papers, by attendance at conventions and conferring with other bee-keepers—in short, by every means within his power;—but that is no reason he should wait until he becomes a thoroughly improved bee-keeper before he attempts improvement of his bees. Just as soon as he has more than one colony of bees let him begin to take careful note of what each colony does, and then persistently breed from the best.

Let it, then, be the ambition of every beginner to be not merely a bee-keeper, but to be one of the very best of bee-keepers, and to have the very best bees it is possible to possess. This will tend to the highest enjoyment in the business, and at the same time to the highest financial reward.

The National Election Result

The election by mail-ballot, of the National Bee-Keepers' Association, was held as usual during the month of November. As reported to us by the General Manager, this is the result:

PRESIDENT—George W. York, of Chicago.

VICE-PRESIDENT—W. D. Wright, of Altamont, N. Y.

SECRETARY—Louis H. Scholl, of New Braunfels, Tex.

GENERAL MANAGER AND TREASURER—N. E. France, of Platteville, Wis.

DIRECTORS (3 elected each year)—J. E. Crane, of Middlebury, Vt.; E. F. Atwater, of Meridian, Idaho; and R. A. Morgan, of Vermillion, S. Dak.

The president-elect wishes to express his deep appreciation of the high honor conferred upon him, and the confidence reposed in him, in this election for the third time to the presidency of the National Bee-Keepers' Association—the largest organization of bee-keepers on this continent. It has now something like 3500 in its membership. In 1896 he was first elected president (at Lincoln, Nebr.), and re-elected in 1897 at Buffalo, N. Y. He hopes, if possible, with the earnest co-operation of the officiary and the rank and file, not only to have the biggest and best annual convention of bee-keepers in 1910, but to increase the membership during the next year (Shall it be to 5000?), and also to make the National Bee-Keepers' Association of larger benefit to all bee-dom than it has ever been in its existence of 40 years. Will not all join in such efforts, and thus help to establish the business of bee-keeping upon a firmer and more enduring foundation than it has today?

Getting Honey Out of Cappings

Some put the cappings in a solar wax-extractor, and when the melted product cools, the wax and honey will be separate. But there is some danger that the honey may have a cooked taste. It is a common practise to put the cappings in a barrel or other vessel with cotton-cloth or wire-cloth in the bottom, through which the honey slowly drains, the honey thus obtained being of best quality, provided honey of best quality was in the comb. But this leaves still a considerable amount of honey adhering to the combs. Nearly all of this can be drained out by giving it a little time in a damp cellar, the thin drippings being used to make vinegar. J. A. Crane has a plan by which the least remnant may be got out after being drained, or the whole cleaned up without any previous draining. He says in the Bee-Keepers' Review:

> After my cappings have drained all they will, I jam them into kegs or large 6-gallon pails, and turn them on their sides with the top over a telescope cover or large box, out-of-doors or in an open building. The bees work them over, and they fall into the box; and when the bees leave them they are as dry as bran; and, to my mind, in much better shape for melting; and the bees have the honey, which is of little value if cooked up with the wax. Of course, a barrel would need quite a large box, and the bees would take quite a while to dig it all out, and, as with a large keg, it would hasten matters a bit to give the barrel an occasional turn so as to get the bulk of the cappings on the upper side.

Eggs Delayed in Hatching

D. M. M. reports in the British Bee Journal, that the past season was unusual in having such changes of temperature a number of times that the cluster of bees of the brood-nest shrank, leaving the larvæ out in the cold to perish; but when the cluster expanded with the warming up of the weather, the eggs that had been left out in the cold hatched out all right. Careful watching showed that "apparently these eggs had been lying inert for about 3 weeks."

Dzierzon reported the same thing, although the case he reported was not from force of circumstances, apparently, but from volition on the part of the bees. Probably delay in hatching out eggs is not very uncommon, although under ordinary circumstances it necessarily escapes observation. The careful observer will perhaps not fail to have noticed that sometimes, when a queen has been removed, quite a few cells of unsealed brood will be found present in the hive 10 days or more after her removal, although normally all brood should be sealed in 8 or 9 days.

Larger Cells and Larger Bees

In Prakt. Wegweiser, mention is made of larger cells than common being used in comb foundation by the French Abbe Pincot. Instead of 5 cells to the inch, there were 4.53. Larger bees resulted, and from 30 colonies of these larger bees he harvested just about 50 percent more than from 31 colonies having bees of the usual size.

It seems a little strange that in this country so little attention has been given to the size of bees. Years ago A. I. Root conceived the idea of getting increased size by using foundation with cells much larger than the usual size. The bees seemed not to understand fully what was required of them, and used a good many of the cells as drone-cells. The experiment was given up as a bad job. If, instead of such large cells, Mr. Root had used cells just a little larger than ordinary, the result might have been different. At one time a Florida bee-keeper had bees considerably larger than usual, so that the natural comb built by them was perhaps midway between worker and drone-cells in size.

There can be little doubt that the size of bees may be increased. But will more honey be secured from an apiary of these larger bees? The single instance given points plainly in that direction, but one swallow does not make a summer. Perhaps the thought that nothing is to be gained by increased size has prevented effort in that line, and it is quite possible that there would be no real gain.

Piping and Quahking of Queens

Although constant advance is being made in bee-culture it is doubtful whether bee-keepers at large have at the present time as much practical knowledge of the noises made by a queen as they had 50 years ago. Nothing strange about this, since these noises are generally connected with swarming, and nowadays a very large number of bee-keepers try their best to have no swarming occur.

One of the brightest young practitioners shows lack of a working acquaintance with the notes made by queens, when he says in an agricultural paper, speaking of the piping of queens:

"This is a sound that few people hear, but it is easily heard if the right time is chosen. It resembles the note of the katydid more than anything else, though it is neither so long nor so loud.

"This noise is made by the young queens while still in their cells. It is the war-cry of hostile forces."

No hint is given as to more than one tone, and yet the quahking of a queen is something quite different from piping, and more queens may be heard quahking than piping. Instead of the piping being "made by the young queens while still in their cells," a queen *never* pipes while in the cell. Piping is the note made by a queen that is out of the cell, *quahking* is the noise made by a queen that has not yet emerged from her cell.

To this some one may reply, "It seems hardly worth while to have two names for the same thing, for the only difference between piping and what you call quahking is that the latter is more muffled because the queen is in the cell." Any one who has such a belief would do well to allow at least one natural swarm so as to have a chance to hear for himself the piping and quahking. Go to the hive in the evening, after the bees have stopped flying, about 8 days after the prime swarm has issued, perhaps an evening or two before this, perhaps one or more after, put your ear to the hive and listen. At first you may hear nothing but a confusion of noises of different kinds made by the workers, but in a very short time the piping will be easily distinguished from all other sounds, louder and clearer, so that you may even hear it sometimes a few feet away from the hive. Immediately after the piping you will hear a queen quahking—more likely several queens will respond by quahking. Do you recognize no difference except that the responding tones are muffled? Listen again, and note the length of the tones. The queen that pipes makes first a long note, much longer than any note of quahking, immediately a note of the same kind a little shorter, and each succeeding note shorter until the close. In contrast with this the sounds of quahking, while coarser, seem more hurried, and of pretty much the same length throughout. No, after listening once for yourself you will never make the mistake of thinking that quahking is the same as piping only more muffled.

A queen never quahks after she emerges from her cell. She may—perhaps always does—begin piping as soon as she leaves her cell, and probably keeps at it by spells until satisfied no rival is in the hive; she may pipe, from fright or for some other cause, after she becomes a laying queen, she may pipe when in a cage out of the hive, but she never pipes before emerging from her cell.

Probably no one ever saw a queen quahking; a queen may easily be seen piping. Open the hive in which a queen is piping, and try to locate her. Then listen for the next piping, and it may be in a different part of the hive, for a piping queen is a rapid traveler. Lift out the frame on which she is running, and directly she will stop, hugging down close to the comb, and her whole body will quiver as she makes the piping noise.

Queen Stings a Drone

The rule that a queen will sting only another queen has so few exceptions that it falls to the lot of few bee-keepers to meet the exceptions. Once, and once only in nearly 50 years observation, the writer saw a virgin queen sting a worker. Now comes a report of probably the first case on record of a virgin stinging a drone. Paul Waetzel, in Praktischer Wegweiser, says that he held in his hand a frame on which there was a queen-cell. While the frame was still in his hand the virgin emerged from the cell, and the bees immediately grappled with the queen, which in her turn grappled with a drone that became mixed up in the row, curved her body and stung him in the thorax, and within 15 seconds he was dead.

Are such occurrences accidents, or how are they accounted for?

Foul Brood and Saliva

Anent the matter of foul brood in human saliva, this question was asked in these columns:

> "Why should one be spitting in a hive, unless a tobacco-chewer?"

The Irish Bee Journal replies:

> "But this is to assume that infected saliva, or infected honey either, is harmless scattered about the apiary, and unless 'in the hive,' with which assumption no one will agree."

Which, again, Editor Digges is to assume that one must be spitting somewhere while in the apiary, either "in the hive" or out of it, with which assumption no one will agree—at least "in this locality." However it may be in Ireland, a bee-keeper in this country, unless he be addicted to the weed, while in normal condition never thinks of spitting while working in the apiary all day long.

You say "infected saliva, or infected honey, either." Now by what right, legal or moral, do you assume that even if one does assume that infected saliva is harmless scattered about an apiary, such assumption also involves the assumption that infected honey scattered in the same way is harmless? By what right, sir?

And just because we are not to be spat down by an Irish editor while so far away, nor to be bullied out of our rights to free opinion, we boldly assert (with a very faint interrogation mark attached) that infected saliva, scattered about an apiary, is harmless, since no self-respecting bee goes about seeking what it may pick up in the way of nastiness. So, there!

Increase at Extracting Time

E. Shicketanz reports in Praktischer Wegweiser a somewhat novel plan of proceeding. He secures a new colony from each 6 or 7 colonies he extracts from, and at the same time avoids the unpleasantness of having the air filled with a lot of cross bees that have been swept from the extracting combs.

A tin funnel is made, not in the usual circular form, but long enough and wide enough to have the bees from a comb shaken or brushed into it, this funnel being fastened into a hive-cover. A hive has its entrance closed with wire-cloth, and in it is put frames of foundation or whatever may be deemed best for the new colony, and over this is placed the cover with its funnel. The hive is thus made bee-tight, except for the narrow slit in the funnel. As each extracting-comb is taken from its hive, the bees are brushed into this funnel, until 6 or 7 colonies have been operated on. Then it is placed on the stand where it is to remain, the cover with the funnel removed, and an ordinary cover quickly placed over. Of course it has been furnished with a sealed cell or a queen, and generally a queen will be kindly received if dropped into the funnel with the bees. The entrance may be opened at once upon the hive being placed upon its stand, or the entrance may be left closed for some time, according as it is desired to have more or less of the older bees remain on the new stand. During the brushing, a pail of water stands conveniently by, and if at any time the bees begin to crawl up through the funnel they are treated to a shower.

Forming a Nucleus of Bees

It is a very simple thing to put one or more frames of brood with some bees in an empty hive, and when you have done that you have a nucleus. But after having done that simple thing, you may open the hive the next day to find all the bees gone, and the brood chilled. Some precaution must be taken to make the bees stay where they are put.

The age of the bees has something to do in the matter. Young bees that have flown little or not at all will stay wherever they are put if conditions are satisfactory. Queenless bees are more easily satisfied with a new location than those that have a strong attachment to a laying mother. A large number of bees will stay in a new place better than a small number. If bees are imprisoned for about 3 days, they will, upon being realeased, mark their location and adhere to it.

Keeping these principles in mind, there ought not to be much trouble Take from a normal colony a frame or two of brood with adhering bees (be careful not to take the queen), put them in an empty hive, and fasten the entrance so no bee can pass. Leave them thus for 3 days and then open the entrance. Some, especially at an out-apiary, close the entrance with green leaves or grass. In 2 or 3 days the bees will dig the entrance open, the drying of the green leaves aiding toward this end. If a strong colony should be imprisoned in a hive in hot weather, the bees would probably be smothered to death, but there is no danger of this when a nucleus is in a full-sized hive. And for the general honey-producer it is hardly advisable to use anything but the regular hive for a nucleus.

Along with the frame or frames of brood there should always be given one or more combs without any brood, but containing a pound or so of honey.

Put into a hive as many as 6 frames of brood with adhering bees, and there will be no need to imprison the bees. Of course, it does not matter whether these 6 frames of brood be all taken from the same hive or from 6 different hives. Of course you do not want 6 frames of brood for a nucleus; that would be rather a colony. So 3 days later you may take away all but one or 2 frames of brood, and you will have a nucleus left. With the brood and bees taken away you may form 2 other nuclei, and these being queenless will stay where put without being fastened in, although for greater security it may do no harm to imprison them for a day or more.

Sometimes a beginner wants to avoid the unaccustomed task of finding a queen. Well, a nucleus may be made without ever seeing a queen. Take from a colony a frame or two of brood, shaking and brushing off all the bees. If desired, a half-dozen such frames may be taken. Put them in a hive-body, and set this over a queen-excluder over a strong colony. It will not be very long until the bees from below will come up and cover the brood, but it may be as well to leave it till the next day. Then you can take these frames of brood covered with bees and use them as heretofore directed, with no fear of taking a queen.

If you want to operate with only a single colony, you may proceed in another way. Take from the colony 2 frames of brood with adhering bees, paying no attention to where the queen is. Put these in an empty hive which we will call B, the old hive being A. Set A on the new stand where you intend the nucleus shall remain, and set B in place of A. Four days later you may find plenty of eggs in B. That shows that the queen is in B. Bring all the brood and bees except one or two frames from A and put in B, of course filling up the hive with drawn-out combs or frames filled with foundation. That leaves your nucleus on its new stand in A. You may, however, find no eggs in B. If not you will be petty sure to find queen-cells there. In that case all you have to do is to let the hives swap places, and that leaves your nucleus on its new stand in B. You will understand that these changes are made in view of the fact that the field force will remain at the old stand, no matter which hive is there.

No Use Doctoring for Black Brood

Delos Wood writes: "I have had experience with black brood, and say it is useless to doctor for it. The McEvoy treatment is the only remedy." For some reason American bee-keepers have never taken much stock in using drugs for either kind of foul brood, although in Europe they are used no little, at least as palliatives. In England it is a common thing to put napthol beta in all syrup that is fed, as a preventive.

Color of Virgin Wax

Mr. T. W. Cowan teaches that freshly made wax has a yellow tint. Dr. C. C. Miller sent him a sample of wax simply melted from a piece of comb that had never been used for anything but to contain its one filling of honey, of which Mr. Cowan says in the British Bee Journal:

"The sample is very nearly white, and much paler than any beeswax obtained in this country without bleaching."

The question is whether other bee-keepers in this country find virgin wax white like Dr. Miller's, or pale as in England.

Dr. Miller's Experience with European Foul Brood

In 1907 some cells of dead brood were found in No. 13. We thought it might be that they were poisoned, as an orchard in easy reach had been sprayed while the trees were in bloom. If we had known at the time that we could send samples to Dr. Phillips at Washington for identification, it would have saved no little subsequent trouble. But No. 13 apparently recovered, and was one of the very best in the whole apiary. In 1908 I think the same trouble appeared in 2 colonies, and little heed was given to it, the supposition still being that the spraying accounted for the trouble. The year was a boomer for the bees, and if there was any dead brood later in the season it was unnoticed.

In the spring or early summer of 1909 we noticed more or less dead brood in a number of colonies, but not until after we had done our level best to spread it throughout the whole apiary by exchanging frames. A sample was sent to Washington. The reply came that we were entertaining foul brood—not American—but European—the kind that had been pronounced ten times worse than American!

Just for a little I had a feeling like giving up in despair. But not for long. Others had fought the disease; why not I, even if it was spread all through the apiary? One thing to be thankful for was that I had given up the out-apiary, and had nothing but the home apiary to care for. Things are never so bad but they may be worse.

In all there were about 150 hives in the apiary with bees in, although a good many hives contained nuclei, most of which were shortly broken up. Looking over the record book now, I find only 22 colonies that were at all times entirely clear of the disease throughout the entire season, against 93 that were more or less affected. How many of the nuclei were affected I do not know, but breaking them up certainly lessened the number of affected families to deal with. Besides, the season being one of dearth, there was always danger that robbing might be started at any one of the nuclei, and a diseased nucleus might thus give the disease to several clean colonies.

The failure of the crop made matters look more discouraging, although I may remark in passing that the late flow filled up the hives in good shape for winter, and gave about a thousand sections besides. The most discouraging feature of the whole case was the fact that all around were those who had one or more colonies here and there whose bees were diseased, and however often I might clean up, these sources of infection would always be ready to give me a fresh start until they were all wiped out; since there is no law in Illinois to prevent any one from indulging in all the foul brood he likes.

In some colonies only a bad cell or two were to be seen; and right here is as good a place as any to say just what was to be seen. Generally the diseasd brood was seen when nearly full grown and still unsealed. A healthy larva is pearl-white; the diseased brood is cream color or darker. That's the only thing we paid any attention to, and it is not difficult to detect, even if there be only a single diseased larva in the hive. Generally very little ropiness could be detected, and the odor in this European or black brood is very little compared with that of American foul brood. There was no appearance of anything wrong with the sealed brood, as is the case in American foul brood. Perhaps there is little or no diseased brood in the sealed cells of European foul brood, the brood all dying before it is sealed and being cleaned out by the bees. And right here, *I think*, is a marked difference between the two diseases. In American foul brood the putrid mass dries down in the cell so solid that the bees cannot remove it, while in the European variety it is not so much like dried glue, and the bees can clean it out of the cell, as was shown by the blackened remains thrown out at the hive entrance in at least some cases.

The amount of bad brood in a hive ran all the way from a single cell up to perhaps one in every 8 or 10 cells of unsealed brood. This, however, may not be entirely correct, as it is only a matter of memory. As we wanted to give attention first to the worst cases, we marked as "bad" any colony that had one or more bad cells up to those that had perhaps one bad cell in every 20 cells of unsealed brood, and anything worse than this was classed as "very bad." I know it may sound a little strange to some to class as "very bad" a colony having among its unsealed brood only 5 to 12 percent diseased, for that would class as very bad a colony having only about 1½ percent of its *whole* brood diseased; when they have seen foul brood so bad that nearly all the brood in a comb, both sealed and unsealed, would be rotten. I'm only telling how it was here. How long the disease would have to run before it would get to be so very bad I do not know.

July 8 we began throwing on foundation after the orthodox plan, beginning with some of the "very bad" cases. In the first case we shook the bees on newspaper in front of the hive, so that if any affected honey was shaken out the newspaper could be burned. But after this first case we *brushed* the bees off. It was perhaps safer, and on the whole less trouble. Dr. Phillips having said that he thought the second shake was not necessary, the bees were thrown upon full sheets of foundation, and I may say here in passing that in no case where they were thus thrown upon foundation did the disease appear again. Neither did the disease reappear from infected hives, for nothing whatever was done to disinfect the hives. Whether any harm may come in future remains to be seen, but as no harm was found up to the close of the season, it seems probable that none will be. The frames were boiled in lye and used again.

It was not long before we discovered that colonies that had been treated were deserting their hives. In all there were 9 hives that were thus left utterly empty. We concluded that as no honey was coming in they were starved out. So, after that, we began giving honey to each colony when it was brushed. If a super with a little honey had been on the hive, it was left, with an excluder under it. Otherwise a section or two was put into the body of the hive. Although these sections were generally from diseased colonies, in no case was it discovered that any infection came from them.

Giving the bees a lunch at the time of brushing them was generally effective in preventing desertion, but not always. We finally settled on the plan of leaving in the hive one of their combs. This was put in one side of the hive, and next to it given 2 empty frames. Not empty combs, but empty frames—not the least bit of a starter in them. Generally the bees made no use of more than one of these, and within 3 or 4 days we found at least a little comb built on the frame next to the comb. Then we took away the comb, leaving the frame they had started on, and filling up the hive with full sheets of foundation. Sometimes we took away the frame they had started on as soon as a good beginning was made on the foundation, and sometimes we didn't. In either case the cure was all right, only there was danger of the frame being filled out with some drone-comb.

The brood that was taken from 4 colonies was piled up on a 5th over an excluder. In three weeks the brood would be hatched out, and the combs in the 4 upper stories would be ready to be melted up. But there would still be the lower story full of affected combs, which would have to be dealt with. Then I thought we might take advantage of the Alexander plan, if there was anything in it. The plan of the late E. W. Alexander in treating European foul brood was to make a colony strong, make it queenless for 3 weeks, and then give it a young Italian queen, the bees, while queenless, having cleaned out all disease from the cells. So I took the brood from the diseased colonies and enough bees to care for the brood, and made a pile 4 or 5 stories high, leaving the pile queenless. In 10 days all queen-cells that were started in the pile were killed, and either then or within 2 or 3 days a very young virgin queen of choice stock was given.

The combs of some of these piles, after being thus treated, seemed to be cleaned out all right, and no disease showed in the brood that was in them afterward. Other piles were a failure. I am inclined to think that the success was where the piles were very strong in bees, and the failures where there were not so many bees.

As before said, we commenced first on the "very bad" cases, leaving till the last the mildest cases, and by the time we got around to take care of these last no bad brood was to be found in them, the bees having apparently cleaned out the disease of their own accord. Of course these were left without any treatment. There were 23 of these colonies which had at least a few cells of bad brood and were cleaned up by the bees themselves.

The regular thing is to shake on foundation or starters in the evening—that, probably, because safer from starting robbing. With so much to do, it would have been inconvenient for us to do all the work in the evening. We did it any time in the day when the bees were at work, and although a dearth was on, yet there was at least a little the bees could do for a good part of the day, even if they did not get enough for their own use. We kept a very sharp lookout for robbers, and whenever there was any sign of them we suspended operations.

From the experience I have had so far with European foul brood, and from what I know about American foul brood by no small amount of reading, I have doubts as to European being very much worse than American, if indeed it is as bad. But it may be that for some reason the European was not so bad here as elsewhere.

The Alexander treatment was in some cases successful and in some cases a failure. In all cases where colonies were thrown on foundation, although we did some things that were not according to rule, there was never a single diseased cell to be found in any one of them afterward. Yet if it were to do over again, I should make more use of the Alexander plan, and throw fewer colonies on foundation. A colony thrown on foundation was so much more reduced in strength than one left with its combs, that one could afford to treat again the cases of failure with the Alexander plan. Moreover, it is possible that there would be very few cases of failure with the Alexander plan if all colonies treated were first made *strong enough.*

It is just possible that what succeeded in a year of crop failure might not be just the same in a bumper year. And what succeeds with European foul brood may not turn out the same with American. I have some doubt whether the Alexander treatment will succeed at all with American foul brood.

C. C. Miller.

Miscellaneous News-Items

One Dollar a Year After this Month

As we have been announcing for several months the subscription price of the American Bee Journal will be $1.00 beginning Jan. 1, 1910. But those who desire to do so can have it for two years in advance of that date at the present rate of 75 cents a year, *if paid before Jan. 1, 1910.* That is, send us 75 cents for 1910, or $1.50 for 1910 and 1911, before the end of this month. Of course, any who are in arears on their subscriptions will also pay to the end of the present year at the 75-cent rate, or 6¼ cents a month. The end of the month to which your subscription is paid is indicated on the printed label which appears on the wrapper in which your copy of the Bee Journal is sent to you each month.

Please don't forget that the 75-cent subscription price ends with this year—1909. But if you want to take advantage of that price, you *must* order during "this month" (December), as mentioned above. After Jan. 1, 1910, it will be $1.00 a year. You can save 50 cents by paying the $1.50 for 1910 and 1911 any time before Jan. 1st—the end of this month.

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The Index for 1909

This number contains the full index for 1909. We hope it will be of value to the majority of the readers of the American Bee Journal. It shows what a wonderful variety of apiarian topics have been discussed during the year. An index is almost invaluable to one who wishes to discover quickly what has been written in a volume, and especially if the same subject has been treated frequently in the same volume. We feel that the space occupied by this index is well used. All who have preserved the rest of the year's numbers should have them bound so as to have them for future reference.

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Chicago - Northwestern Convention

The 30th annual convention of the Chicago - Northwestern Bee-Keepers' Association was held at the Briggs House in Chicago, Dec. 1st and 2d. The attendance was about as large as usual, and the interest taken in the discussions was splendid. Many united in saying that it was one of the best conventions ever held in Chicago, and that meant a good deal, for some great meetings of bee-keepers have been held here. Dr. C. C. Miller, M. M. Baldridge, E. J. Baxter, Geo. W. Jones, Franklin Wilcox, Dr. Bohrer, W. M. Whitney, R. F. Holtermann, F. B. Cavanagh, W. H. Horstmann, and others of the leading convention men were present.

The proceedings were taken in shorthand, and will be published in full in the cloth-bound report of the Illinois State Bee-Keepers' convention held in Springfield last month, and also the report of the National at Sioux City last September. By sending $1.00 to Secretary Dadant, you will thus pay a year's membership in the Chicago-Northwestern, the National, and the Illinois State Association—three organizations for the dollar.

Those elected as officers of the Chicago-Northwestern Bee-Keepers' Association for the ensuing year are as follows:

President George W. York, of Chicago
Vice-President—Miss Emma M. Wilson, of Marengo, Ill.
Secretary Treasurer—Louis C. Dadant, of Hamilton, Ill.

This convention is held annually in Chicago on the first Wednesday and Thursday of December, during the International Live Stock Exposition.

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To Association Secretaries

We would like to have all secretaries of bee-keepers' associations send us in advance notices of their meetings, so that we can publish them. But be sure to get them to our office in time. We ought to have them at least 60 days ahead of the dates of conventions. Then if they are too late for one number of the American Bee Journal, they will appear in the following number.

We would also like to have the secretaries send us brief reports of their conventions, including the papers read. Try to give the cream of the discussions, also. We would like to co-operate with the officers of all the bee-keepers' associations in America, and if possible help them make their meetings more successful. Why not let the old American Bee Journal aid you, convention officers?

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Our Trips to the East and West

About 4 years ago we visited nearly all the leading bee-supply manufacturers of this country, and what we saw then was indeed a revelation to us. So a few weeks ago we started out to revisit the same enterprising people, first going to the Northwest as described in last month's American Bee Journal. The following is a brief report of our second and third trips:

Walter S. Pouder

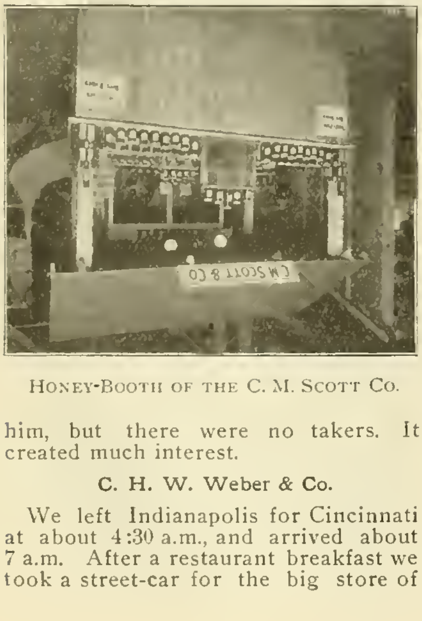
Oct. 15th we left Chicago, stopping first at Indianapolis to see Walter S. Pouder, at 859 Massachusetts Ave. We found him in his magnificent new store, but of course not busy with bee-supplies, as the season was over some weeks before our arrival. But he was in the honey business "good and plenty," assisted by his faithful helper, O. I. Masten, who has been with him for about 15 years. Mr. Pouder has been in the bee-supply and honey business for 20 years, and, by reason of his transparent honesty of dealing, and his determination to give entire satisfaction, he has built up a splendid trade in both bee-keepers' supplies and honey.

O. I. Masten.

The C. M. Scott Co.

This bee-supply and honey firm is also in Indianapolis, at 1009 E. Washington St., Mr. E. A. Dittrich being its chief moving spirit. We met him in the evening at the Pure Food Show being held in Tomlinson Hall. A picture of his exhibit appears herewith.

Mr. Dittrich not only had a fine display of both comb and extracted honey, honey-vinegar, etc., but also gave live bee demonstrations in a wire-screen cage to the wondering multitude. We authorized him to offer any lady 50 cents who would enter the cage with him, but there were no takers. It created much interest.



Honey-Booth of the C. M. Scott Co.

C. H. W. Weber & Co.

We left Indianapolis for Cincinnati at about 4:30 a.m., and arrived about 7 a.m. After a restaurant breakfast we took a street-car for the big store of C. H. W. Weber & Co., at 2146 Central Ave., now managed by Mr. Chas. H. Weber, who is a hustler *in* business and *for* business. He is ably aided in the office by his alert sister "Alma," who doubtless will be surprised to see her photograph in these columns.

Interior View of Walter S. Pouder's Honey and Bee-Supply Office.

As most of our readers will remember, Mr. C. H. W. Weber passed away about a year ago. He succeeded the late Chas. F. Muth in the bee-supply and honey business. Mr. Muth was a sturdy German, honest and enterprising as a man could be. And his successor was every bit his equal in these regards. Mr. Weber maintained the business in excellent style, and his son "Charles" seems to be a "chip off the old block," as the expressive saying goes. He is not only a pushing bee-supply dealer and seedsman, but is the champion rapid honey-bottler of America, we verily believe. His daily capacity is 240 two-dozen case tumblers, ready for shipment, all the work being done by only four men.

Mr. Weber had a small quantity left of a car of the most beautiful sage comb honey, from Southern California, that we ever saw. We believe it was his seventh or eighth car of all kinds of comb honey for this season, besides perhaps several cars of extracted honey. We said Mr. Weber is a hustler, and it is easily proven, as will be seen from the foregoing.

The Fred W. Muth Co.

Mr. Fred W. Muth is a son of the late Chas. F. Muth, to whom we referred above. His firm has built up a large business in bee-supplies and honey. We think we are safe in saying that "Fred" has traveled more thousands of miles in the interest of honey sales than any other living man.

His firm occupies three large floors at 51 Walnut St. We wouldn't dare estimate the number of carloads of honey he had in stock, in both 5-gallon cans and in barrels, but it looked as if there was enough to sweeten half of the country. There is no question but that The Fred W. Muth Co. does its share of the honey business, and also of bee-supplies, as well.

The W. T. Falconer Mfg. Co.

Before landing in Falconer, N. Y., where the great W. T. Falconer Mfg. Co.'s plant is located, we had spent a few days in eastern Ohio, visiting our aged and beloved mother, also sisters and brothers. As we wanted to spend Sunday with friends in Buffalo, and it being Saturday when we arrived at Falconer, we could remain only two or three hours. But Mr. Leslie Martin, who has charge of the bee-supply end of the business, was very kind to us

Miss Alma Weber.

and took us over all the extensive plant of the Company, which is one of the largest in the world making wooden school and advertising novelties, toys, etc. Not a bit of wood is wasted there—not even the knots or sawdust, for they are used for fuel under the great boilers that help to furnish the power necessary to run the immense factory of the W. T. Falconer Mfg. Co.

Saturday being a short day, and Mr. Falconer himself being very busy, and also having a previous engagement, we left immediately after lunch, which we had with Mr. and Mrs. Martin.

Referring to Mrs. Martin, reminds us of a good story. It seems that Mrs. M. (who until a few months ago was Miss Carrie Boehme, of Cincinnati), was chief clerk in the office ot The Fred W. Muth Co. We had met her there four years ago, and in the absence of Mr. Muth, she was very gracious and kind to us. We remember that Mr. Muth, on several occasions, referred to "Miss Carrie" as being practically indispensable to the firm.

Well, a year or so ago Mr. Leslie Martin came to Cincinnati. Being a practical bee-keeper, and for some time in the employ of the apiarian department of the United States Government, he and Mr. Muth were soon good friends. He was invited to make Mr. Muth's office his headquarters while in Cincinnati, which he gratefully did.

Mr. and Mrs. Leslie Martin.

A little later Mr. Muth was asked by the Falconer Mfg. Co. if he knew of some wide-awake young man who could take charge of their bee-supply department. Of course he did. He knew just the right man. And so he recommended Leslie Martin.

But here is where the "good story" comes in. What did "Leslie" do but take "Miss Carrie" with him as his wife! And now she helps him in his office work.

Talk about enterprise! Do you know of anything to beat that? And poor Mr. Muth—well, his "Miss Carrie" was gone. And yet no one could blame Mr. Martin, for he simply took advantage of his opportunity. He was wise. He knew what he wanted—and got her.

But Mr. Muth took it good naturedly, and is getting along all right with his office work, for he was fortunate in having a very capable sister who could come and take the place that "Miss Carrie" filled so acceptably for so many years.

The A. I. Root Co.

We next called on the A. I. Root Co., at Medina, Ohio. They were in the midst of a general tear-up, incident to re-building. A 3-story concrete-and-brick building for warehouse purposes was the biggest thing under way just then. They were also changing their water-sprinkler system, which cost enormously. But, when completed, it will reduce their fire insurance rate greatly.

Main Factory of The A. I. Root Co., Medina, Ohio.

The whole plant of the Root Company covers something like 15 acres of ground. It is a tremendous thing, and practically all built up as a result of the work of the busy little honey-bee. The wholly-concrete building in which are located all the business offices of the firm, besides printing office, etc., is a magnificently appointed one-story building. The private office of each member of the firm is delightful.

When we were at Medina all the employees that could possibly help outdoors were used in constructing the new building, and in making the general changes. During the busiest season they employ something like 350 hands.

Mr. A. I. Root, the "father" of practically everything at Rootville, was at home, but expected in a few days to go to his Florida camp for the winter. We found him dictating to "Stenog." (Mr. W. P. Root) his semi-monthly sermonette, clad in an overcoat and fur cap, as usual!

Office and Factory of The Kretchmer Mfg. Co., Council Bluffs, Iowa.

In order to get to our next and last stop in time, Editor E. R. Root very kindly took us in his speedy automobile to Lodi, Ohio, some 10 miles away, after first running out to one of the queen-rearing yards a couple of miles from Medina. Of course the bees were already prepared for winter, and as the day was cool none were flying.

The Griggs Bros. Co.

Our last call was made on The Griggs Bros. Co., 24 N. Erie St., Toledo, Ohio. We had never been there before. Toledo is a beautiful city, located at the mouth of the Maumee River, on Lake Erie. The Griggs brothers are two enterprising young men who surely are doing a great business in bee-supplies and honey. Their large bottling department is in charge of Mr. Kimball, father-in-law of Mr. S. J. Griggs. They have a fine, large, 3-story store building, splendidly arranged for their growing business. And they are succeeding, too, as every firm will succeed that is determined to deal squarely and honorably every time. It was a great pleasure to us to spend several hours with these brothers who, though having had their struggles, are rapidly getting to the top in both honey and bee-supplies

The Kretchmer Mfg. Co.

Nov. 18th we were at the factory of the Kretchmer Mfg. Co., Council Bluffs, Iowa. In 1905 it was moved from Red Oak, Iowa, where it had been located for many years. Mr. Edward Kretchmer, the head of the concern, began the manufacture of bee-supplies in 1864, which makes his firm the oldest in its line in the United States. It has had a phenomenal growth since being established in Council Bluffs, having increased its volume of business during 1908 and 1909, 109 percent over that of 1907.

Railroad Tracks and Lumber Yards of The Kretchmer Mfg. Co.

The power used by the Kretchmer Mfg. Co., is all electricity—29 five-horsepower motors. They are about to install several new machines. One machine, of their own invention, turns out complete Hoffman end-bars, the blank piece of wood being put in at one end of the machine, and comes out at the other end a perfect Hoffman end-bar, and at a rapid rate. They make the "Champion" bee-smoker, of which 15,000 were turned out the past year.

Council Bluffs has 13 railroads, which makes it such an exceptional shipping-point. It is also in a great honey-producing district, and being on several of the transcontinental railroad lines, makes it a sort of gateway to the far West. And that part of our country, through its tremendous irrigation projects, is rapidly being opened to the growing of alfalfa and the coming of many bee-keepers, which result is sure to follow.

Three of Mr. Kretchmer's sons, besides a brother of his wife, are all employed in the business. Each is in charge of a different department, which thus keeps the management pretty much in the family. No wonder the business is such a success. And, what is best of all, they deserve the large success they are having.

It was very encouraging to us to come in personal touch with the manufacturers of bee-keepers' supplies again. Some 4 years ago we made the rounds among them, and felt that it was well worth the doing. We think that Bee-keepers ought to be in closer contact with the bee-supply manufacturers and dealers. Their interests are mutual. Each needs the other in order to succeed. One cannot be independent of the other. So if there is anything the American Bee Journal can do to help cultivate a better relation or understanding between the honey-producer and manufacturers of bee-keepers' supplies, it will be only too glad to do it. We believe in encouraging everybody connected in any way with bee-culture. It is an ennobling industry. Bees are so beneficial in so many ways. Their work among the spring-time blossoms is scarcely less valuable than their honey product. So the fruit-growers and bee-keepers should also be the best of friends. In fact, one pursuit is so intimately related to another that really no man can say he is independent of every other man. No one liveth unto himself. Surely no normal man would desire to do so. We all need to get closer together, and thus gather inspiration and help from our fellows in life's battle for existence and for success. "In union there is strength"—of course there is. There is power, also. Let us all pull *together*, and thus go on to the highest progress and advancement possible to man—not only in beedom, but in every other department of the world's endeavor.

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California Winter Bee-Institutes

Institutes for bee-keepers under the direction of the University of California are being arranged for at the following places:

For Northern California, at Sacramento Dec. 17th and 18th (jointly under the auspices of the Northern California Bee-Keepers' Association).

For the San Joaquin Valley, at Tulare Dec. 20th and 21st (jointly with the Tulare Bee-Keepers' Association).

For Santa Barbara, Ventura, Los Angeles and Orange Counties, at Santa Paula Dec. 22d and 23d.

In the Riverside District, at Colton Dec. 28th and 29th.

Definite dates have not yet been set for the usual institute in the Central Coast Counties, but very likely a joint meeting will be arranged for with the California Central Coast Bee-Keepers' Association at some central point in Monterey County, perhaps at Salinas.

The following program will give something of the plan and scope of these institutes, slight variations being made in the topics to be presented according to local needs:

First Afternoon, 1:30 p.m.

Music,
Address of Welcome.
Response—Mr. Ralph Benton, of the University of California.
"The Kind of a Location to Look For"—Mr. Benton.
"Equipping an Apiary"—Mr. M. C. Richter, of the University of California.

First Evening, 8:00 p.m.

Music.
"Problems in Bee-Breeding"—Mr. Benton.
"Methods of Queen-Rearing"—Mr. Richter

Second Morning.

Question-Box.
"Building Bees Up for the Harvest"—Mr. Benton.
"The Marketing of Honey."
"Moving Bees to Increase Returns"—Mr. Richter.

Second Afternoon, 1:30 p.m.

Question-Box.
"Honey-Yielding Plants and How to Utilize Them"—Mr. Richter.
"Foul Brood and Other Diseases of Bees"—Mr. Benton.
"The Rendering of Beeswax"—Mr. Richter.
"The Chemistry of Honey and the Making of Vinegar"—Mr. Benton.

Bee-keepers are requested to bring samples of honey and beeswax to the institute gatherings, and in this way contribute to the institute exhibits.

Ralph Benton,
In Charge of Apiculture,
University of California.
Berkeley, Calif.

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Apiary of Mr. Frye

I am sending a view of my bee-yard. I had, spring count, 54 colonies, and increased to 67. I got a little over 1000 pounds of honey. This was a very poor year for this locality. Some of my neighbor bee-keepers did not get more than 4 or 5 pounds to the colony. I got about 60 pounds from a queen that I got last year. I am selling my honey now at 12½ cents per pound for the extracted, and 20 cents per pound for the comb. I have mostly alsike

Apiary of Orville F. Frye, of Dodgeville, Wis.

clover as pasture. I work with the clipped-queen system. I found one swarm on the ground one morning not 20 feet from an apple-tree. They were black bees with a queen that could fly, so I knew that they were not mine. We hope for better luck next year.

Orville F. Frye.

Dodgeville, Wis., Sept. 7, 1909.

The Illinois State Convention

We attended this convention at Springfield, Nov. 18 and 19. The attendance was good, and it was perhaps the best meeting ever held by the Illinois State Bee-Keepers' Convention. A full shorthand report of the proceedings was taken, which will be published in pamphlet form later on, and announced in these columns when ready for distribution.

The following were elected as officers for the ensuing year:

President—C. P. Dadant, Hamilton, Ill.

Vice-Presidents—1st, Aaron Coppin; 2d, J. W. Bowen; 3d, Louis Werner; 4th, W. B. Moore; 5th, I. E. Pyles.

Secretary—Jas. A. Stone, Route 4, Springfield.

Treasurer—Chas. Becker, Pleasant Plains.

Foul Brood Inspector—A. L. Kildow, Putnam, Ill.

Book Notices

This is a column begun last month in which will be noticed some of the best books of the day. This will be a help to our readers, for many who wish to place before their families and others good books, do not know what to select. Anything we notice in our book column can be relied upon as being just as represented. And we would be glad to fill orders for those we describe, either alone or clubbed with the American Bee Journal, as we state in the paragraph following the notices. Also any books we do not mention we will be glad to order for our readers, if they will write us or remit to us for them.

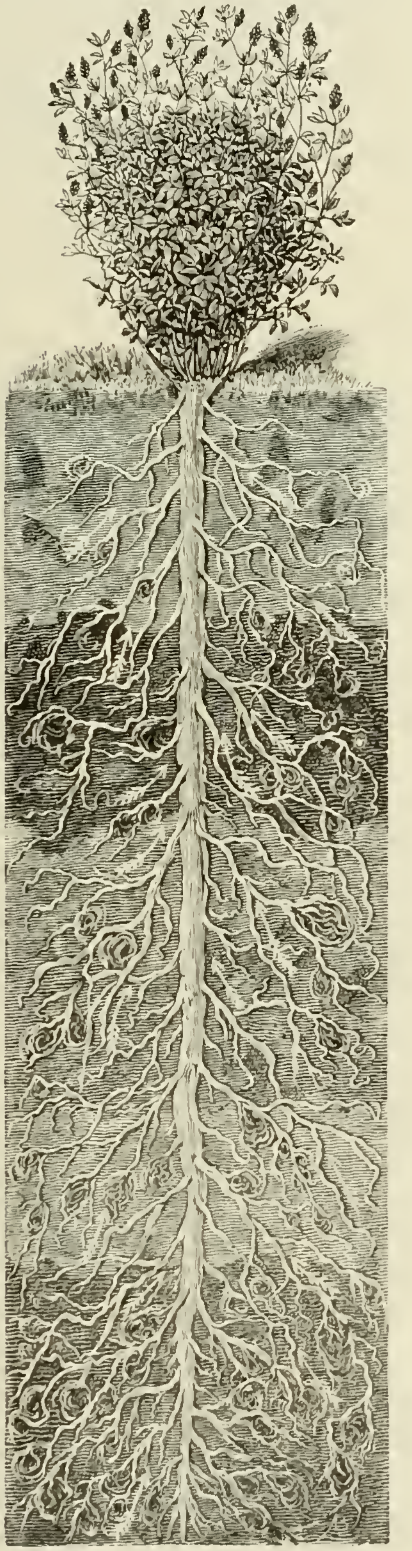
December Number a Little Late

Owing to the Chicago-Northwestern coming the first days of this month, and also on account of this December issue of the American Bee Journal being a 48-page number, it is a few days later than usual. We aim to mail the Bee Journal between the 10th and the 15th of each month. If at any time a subscriber does not receive it before the 18th or 20th it has likely been lost in the mails, and another copy should be asked for *then*, and not wait several months, as we may be out of the desired copy if not written for promptly.

Alfalfa—the Great Honey-Plant

Farmers' Bulletin No. 339, issued by the U. S. Department of Agriculture, Washington, D. C., is devoted wholly to a consideration of alfalfa. Its description is given as follows:

> The accompanying illustration indicates the general appearance of the plant. It may briefly be described as being a deep-rooted, long-lived herbaceous forage plant belonging to the botanical family Leguminosæ, or pod-bearing plants. Its flowers are violet, clover-shaped, and borne in compact oblong racemes or clusters. The pods are small, slightly hairy, and spirally coiled in two or three turns. The kidney-shaped seeds are about one-twelfth of an inch long, and several are contained in each pod.



Alfalfa—Showing Long Roots.

> One of the most important characteristics of alfalfa is its long taproot, often extending 15 or more feet into the soil. This enables the plant to reach stores of plant food in the soil which cannot be secured by the ordinary shallow-rooted field crops. The long taproot is also of great importance in sections of limited rainfall, as by this means the plant is enabled to withstand extremes of drouth which would otherwise be fatal.

The value of alfalfa for bees is briefly mentioned in this paragraph:

> The development of the honey-producing industry in the West has been practically coincident with the extension of alfalfa culture. Statistics indicate that the heaviest yields of honey per colony of bees are gotten in the sections showing the greatest acreage of alfalfa. That the honey is of a good quality is evidenced by its standing in exhibitions of this class of products. The number of times that the alfalfa fields come into blossom during the season makes possible the gathering of successive crops of honey.

Our Front-Page Pictures

The following are the brief descriptions of the front-page pictures of apiaries:

No. 1.—Apiary of C. E. Eccleston

This apiary is located in Greene, N. Y., and contains 31 colonies.

No. 2.—Apiary of S. A. Peck

I am enclosing a photograph of my bee-yard and honey-house taken after the supers were all off but one, and some of them all off. I "weighed up" a few days ago, and have only one hive in my yard that weighs 50 pounds, and many of them under 30. My banner colony that stored about 120 pounds, weighs only about 30 pounds. We have had the poorest year since I commenced, in 1902.

The picture was taken about Sept. 1, 1909, after the supers were nearly all off.

S. A. Peck.

Northumberland, Pa., Oct. 8.

No. 3.—Apiary of Chas. D. Doan

I am sending a picture of my bee-yard which consists of 37 colonies at present; 27 spring count. I am in the center, and my daughter is in the foreground with the smoker fighting a bee that is buzzing around her.

The forepart of the season was not very good for honey—no No. 1 white of any account, but the fall flow was better. My bees averaged a little over 80 pounds per colony, spring count.

The building you see in the distance is the Hull Butter Factory, 30 rods north.

Hull, Iowa., Sept. 22. Chas. D. Doan.

No. 4.—Apiary of Leroy Lloyd

I am sending a view of my Steuben County apiary of 137 colonies, mostly in home-made 8-frame chaff hives. This year has been the most utter and complete failure I ever saw for bees, and all kinds of farming, too. About Aug. 1 to 10, I saw something I had never seen before. The thermometer at noon stood from 85 to 90 in the shade, and in my whole yard of bees you would have to look sharp to see a bee flying, on account of the terrible drouth drying all the nectar up, when usually the flow is at its best from clover and buckwheat.

Leroy Lloyd.

Rathbone, N. Y., Oct. 15.

No. 5.—Apiary of J. E. Lulls

I am sending you 2 photographs, one showing a bee-tree that I found up along the mountain side, from which I took out 100 pounds of fine honey. One thing peculiar I noticed, the hole where the bees went in and out was not more than half an inch in diameter. The hollow was about 3 feet long by 16 inches across. The tree was a monster elm, nearly 4 feet through the base.

The other photograph [No. 5] shows my 4 colonies of bees which I keep in the rear of a city lot. Two of the colonies have stored 175 pounds of honey. I see no reason why people living in the city cannot keep bees, and have all the honey they want to eat, and some to sell. I winter them outside. I put a box over them 4 inches larger than the hive, and stuff the space with dry maple leaves, and cover over the top waterproof, leaving a space in front for the bees to pass out when the weather is warm enough for them to fly, and that is not often, for we get plenty of zero weather here, and lots of snow.

The 2 colonies I started in with last fall came out in fine shape last spring. My opinion is that outdoor wintering is the natural way. A friend of mine lost 60 colonies last winter trying to winter them in his cellar. He put in 140 colonies, with the above results.
J. E. LUTTS.
Hamilton, Ont.

No. 6.—Apiary of F. D. Look

The yard contains 60 colonies and is run for comb honey—no extracted—and the honey is all sold within a few rods of the apiary. I never shipped a pound, and have been at it 15 years. My trade grows as fast as my apiary does. I had one-third of a crop this year.
F. D. LOOK.
Campbell, N. Y., Aug. 7.

No. 7.—Apiary of Jay S. Kendall

I am interested in bees, and have been since I was 9 years old, so I have had a little experience in the last 17 years. At present I have 12 colonies. They stored lots of honey this year, and are good and strong this fall. Enclosed you will find photographs taken of them. One shows myself and wife just going to take the honey off. Notice 2 queens caged, which we are going to introduce. We both are interested in the bees.
JAY S. KENDALL.
Chemung, Ill., Sept. 30.

No. 8.—Apiary of W. S. Chapel

I enclose two views of my apiary of 34 colonies in Danzenbaker hives. I started 5 years ago with black bees, but in the last 3 years I have requeened with red clover Italian queens from several breeders, and in every case the queens were all right, and I was treated in a fair and honest manner.
W. S. CHAPEL.
North Troy, Vt., Sept. 13.

New Jersey Convention

The annual meeting of the New Jersey Bee-Keepers' Association will be held in the Assembly Room of the State House at Trenton, Saturday, Dec. 18th, beginning at 9:30 a.m. The program is not completed, but there will be papers on Comb Honey Production, Extracted Honey, Honey-Dew, Requeening, etc. One or two speakers outside of the State are expected.

The forenoon session will be devoted largely to the discussion of our Foul Brood Bill—how to get it before the legislature in a way that it will be favorably considered. There will be appointment of committees, annual election of officers, payment of dues, etc. This will be a very important meeting to all the bee-keepers of New Jersey, and there should be the largest attendance we have ever had. All interested bee-keepers should be there and take part in the discussions and offer suggestions.

There will be quite a little expense connected with getting our Bill passed, and we need all the annual dues of all members, and also many new ones. If any cannot attend, we should be glad to have them send the annual dues (50 cents), and ask for a printed copy of our Foul Brood Bill. Bring along samples of honey, beeswax, and honey-dew for comparison, or anything else pertaining to apiculture.
ALBERT G. HANN, *Sec.-Treas.*,
W. W. CASE, *Pres.* Pittstown, N. J.

"The Honey-Money Stories"

This is a 64-page and cover booklet 5¾ by 8½ inches in size. Printed on enameled paper. It contains a variety of short, bright stories, mixed with facts and interesting items about honey and its use. It has 31 half-tone pictures, mostly of apiaries or apiarian scenes. It has 3 bee-songs, namely: "The Hum of the Bees in the Apple-Tree Bloom," "Buckwheat Cakes and Honey," and "The Bee-Keeper's Lullaby." It ought to be in the hands of every one not familiar with the food value of honey. Its object is to create a larger demand for honey. It is sent postpaid for 25 cents, but we will mail a single copy as a sample for 15 cents, 5 copies for 60 cents, or 10 copies for $1.00. A copy with the American Bee Journal one year—both for 80 cents. Send all orders to George W. York & Co., Chicago, Ill.

Our Liberal Premium Offers

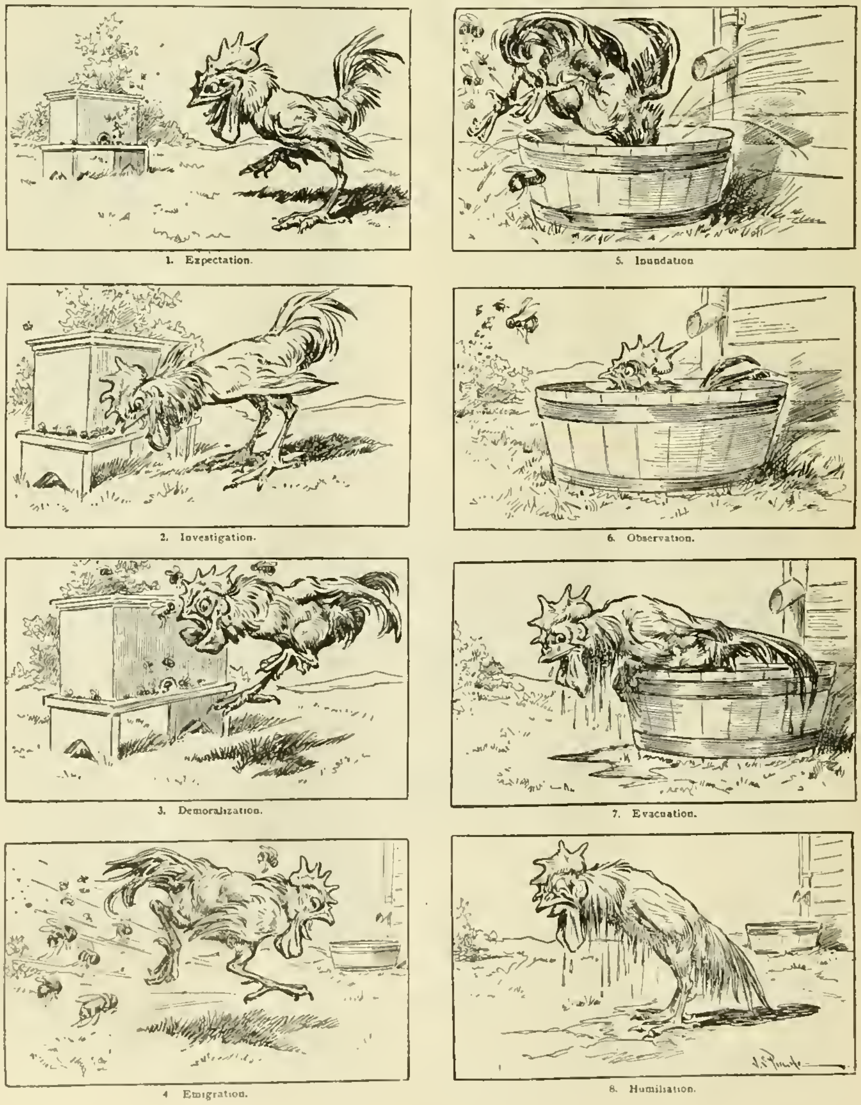
We offer many premiums in this number for the work of getting new subscribers for the American Bee Journal. We request every reader to help us increase the list of regular subscribers. It is not our aim to make more bee-keepers, but to make better bee-keepers of those who now are in the business. Surely this is right. Why not get your neighbor bee-keepers to take the American Bee Journal? It will pay you in more ways than one to do such missionary work. We not only pay you for it, but you will thus be helping to inform the bee-keepers around you how to conduct bee-keeping in the proper way; how to keep their bees free from disease; how not to spoil the honey market for you and themselves; how—but there are so many ways in which they would be helped by reading the American Bee Journal every month. And the cost is so small—only 75 cents for a whole year—about 6 cents a month. We will be glad to furnish free all the sample copies you can use judiciously. Why not begin now?

Langstroth Book "Special"

We have about 30 copies left of the book, "Langstroth on the Honey-Bee," of the edition just preceding the last. It is practically equal to the latest edition, and we will mail them so long as they last, for 90 cents a copy. (The regular price is $1.20.) Or, we will send one of the above 90-cent copies with the American Bee Journal one year—both for $1.50. Address the American Bee Journal office.

The Curious Cockerel and the Busy Bees, or He Found Out

(Drawn especially for "Poultry Husbandry," by John S. Pughe.)


1. Expectation.
5. Inundation
2. Investigation.
6. Observation.
3. Demoralization.
7. Evacuation.
4. Emigration.
8. Humiliation.

Canadian Beedom

Conducted by J. L. BYER, Mount Joy, Ont.

Report of the Ontario Convention

The annual convention of the Ontario Bee-Keepers' Association was held in Toronto Nov. 10, 11 and 12, 1909, during the same week the Ontario Horticultural Show was in progress. This show, now an annual affair, is made up of exhibits of fruit, flowers, vegetables and honey, and as an educator of the public it is a great factor in helping the sales of these different products, and especially so in the matter of honey, as this latter article has, in the times gone by, too often unfortunately been classed as a luxury instead of being looked upon as a staple in the line of foods. The convention was fairly well attended, but personally, at least, I looked for a larger attendance, as the bee-keepers of the Province the past season were blessed with a good crop, as well as good prices—a combination that should certainly go a long way in bringing out the fraternity to such an important meeting. However, what may have been lacking in numbers, was certainly more than made up in enthusiasm.

Pres. Couse, of Streetsville, occupied the chair in his usual genial and capable manner, and the meeting throughout was entirely harmonious, although, as is usually the case at bee-keepers' conventions, the discussion at times was good and lively, very decided opinions pro and con being given on various subjects that came up for consideration.

Among the visitors from a distance were Messrs. Dine, Hershiser, House, and Clark, from New York State—the last three being no strangers to us, as they have been with us before, and from the parting greeting of Mr. Dine, we believe he will, if spared, be with us again at some convention in the near future.

Whatever the impressions formed by our visitors may be, one thing is certain, they are always heartily welcome, and we look forward with pleasure to the thought that in the future there will be more of these fraternal visits back and forth between the two countries, as most assuredly the boundary line is simply imaginary in so far as it refers to the good fellowship existing between the men and women of the bee-keeping fraternity.

QUEEN-REARING AND QUEENS.

Broadly speaking, the time of the convention was mainly spent in discussing two very important phases of bee-keeping, namely—the best methods of suppressing foul brood, and the advantages of having good queens in the hives. With the latter subject, the best methods of rearing queens were also taken up, and the convention was fortunate to have two of our best queen-breeders in attendance, who gave addresses on the subject of queen-rearing, illustrating by means of the various paraphernalia used by commercial queen-rearers, the different steps in the systems so plainly that the veriest novice could have at least a superficial knowledge of this fascinating phase of the industry. The two gentlemen to whom thanks are due for their kindness in showing us how they do their work, are Mr. Clark, of New York, and Mr. Frank Adams, of Ontario. As one member of the Association remarked, it is not often that men are liberal and generous enough to "give away" the secrets of the work, whereby they earn their bread and butter; but he might have qualified the remark by saying that this procedure was not very common outside of the bee-keeping profession.

Along the line of queens, Mr. Sibbald gave a splendid address on, "Importance of Requeening," and in the discussion that followed all agreed that many queens are being kept that should be destroyed, and quite a few present were in favor of the annual requeening of all the hives. However, the majority would not follow so radical a plan, and the general consensus of opinion seemed to favor leaving good queens for at least two years. *Poor* queens should not be left in the hives even one year.

FOUL BROOD.

As to foul brood eradication, the fact that one whole session of the convention was given to the discussion and consideration of this disease proves that it is thought to be a serious menace to the industry. All 14 of the inspectors sent in reports of the season's work, and while it was stated that there was no cause for alarm, yet nothing in the way of half-way measures would ever keep the disease under control.

The black brood outbreak in the eastern part of the Province is really the most alarming factor presenting itself at present, and after the situation had been thoroughly discussed, a resolution was passed unanimously asking the Department of Agriculture to take the most radical measures to suppress the plague before it spreads from the few isolated localities where it is now raging.

GOVERNMENT EXPERIMENT APIARY.

Mr. Pettit gave a resume of the work done in the apiary during the past season, and while it was stated that the work was yet in the initial stage, yet it was hoped that another year the equipment, etc., would be so improved that the experimental work would be of real value to the apiarists of the Province. Mr. Pettit had been in correspondence with the various agricultural stations in the United States and other places, and in the whole comparatively little work was being done in the way of apicultural investigations. All the parties written to had given courteous replies, and in many instances much valuable information had been imparted that will be of much use in perfecting the work and organization of the Station recently established. Mr. Pettit was anxious for suggestions on the part of the bee-keepers as to profitable work to carry on, and while some thought that simple, practical experiments should be first carried out; others inclined to the view that work more of the scientific nature should be undertaken.

Secretary Hodgetts opined that in the near future Mr. Pettit would find plenty of work in both the practical and scientific sides of bee-keeping to engage his attention fully, but at the present time, owing to the work being yet in its infancy, we must wait a while before expecting too much from the limited equipment at their disposal.

GASOLINE ENGINE FOR APIARY WORK.

The use of the gasoline engine around the apiary, was the subject considered by Mr. Nolan, and after hearing of this "handy man" as he employs it, we would not be surprised if quite a few orders for gasoline engines would be placed with manufacturers the coming winter.

Messrs. Miller and Armstrong also highly endorsed these labor-savers, and the statement of Mr. Armstrong, that in extracting 13,000 pounds of honey, the cost for gasoline had been but 75 cents, was quite a surprise to most of those present. The engine as used by Mr. Nolan is on skids, and can be taken from one place to another, and will saw wood, run a small circular saw for making hives—in fact, do almost anything around the place where no great lot of power is needed. Especially for the large, reversible extractors now being manufactured are these engines a real necessity, and where labor is scarce, as it is now in most sections, from an economic standpoint it certainly looks as if it would pay many of us to use more machine-work in out-apiary operations than is now the case.

RENDERING COMB INTO BEESWAX.

Wax-rendering came in for a thorough discussion, and it was felt by many that this valuable product of the apiary was not receiving the attention of many that it deserved. The many presses on the market were discussed, some preferring the hot-water machines and others the unheated press, but all agreed that it was a mistake not to use a press of some kind. A few advocated the use of sulphuric acid for clarifying the wax, but the majority thought it should not be used except in extreme cases. It was pointed out by one speaker that wax properly rendered needed no acid to clarify, and this statement the writer would endorse heartily, as even old combs will yield a beautiful yellow wax if properly handled. While it was thought that foundation makers all use sulphuric acid, yet Mr. Newton, who manufactures a high grade article, surprised the convention by stating that he had never used a drop of the acid.

Mr. Chrysler called attention to the fact that we should be careful in trying new things recommended in the line of cleaning wax, as an experiment recommended by a scientific man in one of our recent conventions had cost him a lot of money. He had reference to the idea of refining beeswax with nitric acid, for while the acid made the wax look beautiful, yet it was impossible to make into foundation after the treatment.

Different speakers called attention to the fact that they were supplying firms with wax for use in the arts, and that the special proviso was that it must be guaranteed that no sulphuric acid had been used in rendering it.

The gist of the discussion was that while it might be necessary in real dirty wax to use the acid, it is a big mistake, and entirely unnecessary, to use it in the ordinary production of the article.

Honored Mr. McEvoy.

A pleasing feature of the convention was the presenting of an address and purse of money to Mr. McEvoy, who so long was in the inspection work, and retired only last spring. Mr. McEvoy replied feelingly and fittingly, and stated that while the work had been done for the interests of the bee-keepers, from a financial standpoint he would have been better off if he had not engaged in the work.

Ontario Wants the National.

A resolution was passed unanimously, and with much enthusiasm, inviting the National Association to hold their next meeting in Toronto. Somehow we have a sort of presentiment over here that the meeting will come our way this time, and if such should not be the case, there will be a lot of disappointed bee-keepers on the north side of the boundary.

Thank Retiring Treas. Emigh.

Mr. Emigh, who has acted as treasurer for a long time, found it necessary to resign, and the Association, while loth to accept his resignation, felt that with the advancing age and business cares of Mr. Emigh, they could not well refuse his request. Many feeling expressions were offered as to Mr. Emigh's thorough work and devotion to the cause during all these years, and a unanimous vote of thanks was passed expressing the good wishes of the members, with the hope that he would be with us in the future as in the past, even though holding no office in the Association.

The officers for the ensuing year are as follows: District No. 1, Alex. Dickson; No. 2, A. McLaughlin; No. 3, H. E. Eyre; No. 4, C. P. Chisholm; No. 5, J. T. Storer; No. 6, W. Couse; No. 7, J. F. Switzer; No. 8, U. H. Bowen; No. 9, W. J. Craig; No. 10, D. Chalmers; No. 11, W. A. Chrysler; No. 12, Henry Johnson.

Ontario Agricultural College—Morley Pettit.

President, Wm. Couse, of Streetsville; 1st Vice-President, W. J. Craig, of Brantford; and 2d Vice-President, W. A. Chrysler; Secretary-Treasurer, P. W. Hodgetts, Parliament Buildings, Toronto, Ont.

Southern Beedom

Conducted by LOUIS H. SCHOLL, New Braunfels, Tex.

The Production of Bulk Comb Honey

Since writing the first installments on this subject, numerous letters with the most favorable comments and approvals have been received, showing that a great interest is being taken in the matter; and that in a favorable way, quite contrary to our expectations, as we feared we would meet with most serious opposition from the majority. It is a surprise to learn, however, that so many see advantages in the production of bulk comb honey, as we produce it in Texas, and admit that its production is applicable to other parts of the country—yea, the world—and not alone in the Lone Star State.

Right along this line we have the following on this subject from Mr. J. J. Wilder, of Georgia:

> There have been too many section-comb-honey hives placed over the South for the good of the bee and honey industry here. The one-pound section presents an attractive appearance, and for this reason the beginner in taking his choice of hives has been led astray by selecting those with sections, and this accounts for at least nine failures out of every ten. It takes experience and a good honey-flow to produce section honey profitably. This cannot be expected of a beginner, and all localities have not the right kind of flows for section honey.
>
> On account of the extra expense of an extracting outfit, and the tedious work of wiring frames, etc., many beginners do not engage in producing extracted honey.
>
> By far the simplest is the production of "chunk" honey in shallow frames. It is the simplest, most satisfactory, surest, and most economical way to produce comb honey.
>
> The bee-keepers' supply manufacturers have never listed a style of super for this purpose, nor have they given any information concerning chunk-honey production. Not much has been written for the bee-papers on this subject, but it is hoped that it will receive more attention, as it is the only hope for successful comb-honey production in many sections, of not only the South, owing to the ability of the bee-keeper or the nature of the honey-flows.
>
> Chunk honey can be produced on either 8 or 10 frame hives in regular 5⅜-inch shallow extracting supers, with frames filled with thin super foundation. One or two inch starters would do, but full sheets are better. Two or three supers should be in readiness for each colony. The first is given as soon as the flow begins, and then others are added as needed, by the tiering-up plan as in section honey production. The honey can be removed as fast as sealed, and put on the market. At least ¾ of an inch of the comb should be left in each frame for a starter to be returned to the bees when the honey is cut out. [I would not do this, as, first, the comb honey is worth dollars and cents to us, and should *all* be cut out; and second, it is much more economical to return entirely clean frames with new, full sheets of foundation, which will be dealt with in a future article.—L. H. S.]
>
> No queen-excluders are necessary. If at the height of the egg-laying season the queen should enter the first super, the brood will soon be crowded out and the combs are used for extracted honey, which we need to cover the comb honey after it has been put up. Such combs can be used as baits by using several to each super first given. If the number of such combs is very large, a super filled with them can be given to each queen for extra laying-room. If such are filled with honey, it can be extracted or left for winter stores. The following spring combs from these can again be used for baits as previously, and so on throughout the season.
>
> If the bee-keeper produces honey only for his own table, he would better leave the honey on the hives in the care of the bees, removing only enough at a time for 4 or 5 meals, and it will be always fresh. But ¾ of an inch of comb should be left in each frame for a starter for the bees.
>
> Chunk honey can be put up in almost any kind of a large-mouthed vessel for market. It is nicer put up in smaller vessels, as the comb is then not broken up as badly when it is removed for use. Two and 3 pound friction-top cans, and 5 and 10 pound round pails are good vessels, especially if the honey is not very light. If of light color, pint, quart, and half-gallon fruit-jars can be used, and nicely labeled. Such would make an attractive appearance and sell at a fancy price on any market. J. J. Wilder.

Well do we remember when Mr. Wilder wrote his first letter of enquiry regarding our way of producing bulk comb honey. He was producing section honey then. His methods now are very much the same as my own in producing bulk comb honey, except in some points. These will be brought out fully in future articles, in which each point will be enlarged upon, with an effort to cover the whole subject, step by step, so that all who wish to try our methods may do so just as we follow them ourselves.

Beginning with the January American Bee Journal, a description of the kind of supers, frames, comb foundation, etc., will be given so that others may know what kind to procure for another season's use. As far as it is possible we will use photographs to illustrate our paraphernalia and *modus operandi*, thus making everything as plain as possible.

Some Apiarian Awards at Texas Fairs

The apiarian exhibits at our large fairs, in spite of the unfavorable season and short honey crop, have been larger and better than in any previous year. More interest is being taken in these exhibitions, which aid the producer to educate the public and to advertise his business. As the chief promoter of this kind of work for many years, I am glad to see the good work progress so nicely, and I am hoping that the bee-keepers will make up their minds even now to make next year's showing better still. The following are the awards:

Texas State Fair, Dallas, Tex., Oct. 16 to 31, 1909

Golden Italian bees and queen in single-comb observatory hives—1st, Louis Biediger, $5; 2d, Brazos Valley Apiary Co., $3.

Three-banded Italian bees and queen in single-comb observatory hives—1st, Louis H. Scholl Apiaries, $5; 2d, Willie Atchley, $3.

Carniolan bees and queens in single-comb observatory hives—1st, Brazos Valley Apiary Co., $5; 2d, Scholl Apiaries, $3.

Cyprian bees and queens in single-comb and observatory hives—1st, Scholl Apiaries, $5; 2d, Smith & Scholl, $3.

Holy Land bees and queens in single-comb observatory hives—1st, Scholl Apiaries, $5; 2d, Brazos Valley Apiary Co., $3.

Black queen and bees in single-comb observatory hives—1st, B. M. Caraway, $5; 2d, Louis Biediger, $3.

Best and largest display of bees of various races in observatory hives—Scholl Apiaries, $10; 2d, Brazos Valley Apiary Co., $6.

Best case of white section comb honey, 12 pounds or more—1st, W. W. Lowrance, $5.

Best display of special designs of comb honey—1st, Wm. Wiede, $5; 2d, Scholl Apiaries, $3.

Best 12 pounds friction-top pails white bulk comb honey 1st, Scholl Apiaries, $3; 2d, W. M Jones, $2.

Best 6 pounds friction-top pails white bulk comb honey—1st, Scholl Apiaries, $3; 2d, W. M. Jones, $2.

Best 3 pounds friction-top pails white bulk comb honey—1st, Scholl Apiaries, $3; 2d, Brazos Valley Apiary Co., $2.

Best display of bulk comb honey—1st, Scholl Apiaries, $10; 2d, Smith & Scholl, $6.

Best dozen jars of white extracted honey—1st, W. M. Jones, $3; 2d, Wm. Wiede, $2.

Best dozen jars of light amber extracted honey 1st, J. E. McClellan, $3; 2d, Smith & Scholl, $2.

Best display of extracted honey, granulated form—1st, Scholl Apiaries, $5; 2d, Smith & Scholl, $3.

Best and largest display of extracted honey —1st, Scholl Apiaries, $10; 2d, Smith & Scholl, $6.

Best sample cake of bright yellow beeswax not less than 2 pounds—1st, J. E. McClellan, $5 2d, Scholl Apiaries, $3.

Best display in special designs in beeswax -1st, Scholl Apiaries, $5; 2d Smith & Scholl, $3.

Best and largest display of beeswax—1st, Scholl Apiaries, $8; 2d, Smith & Scholl, $5.

Best diplay of fruit preserved in honey—1st, Scholl Apiaries, $5.

Best honey-vinegar, with recipe—1st, Scholl Apiaries, $3; 2d, Smith & Scholl, $2.

Best collection of Texas honey-yielding plants, pressed and mounted—1st, Scholl Apiaries, $5; 2d, Miss Meta Hillje, $3.

Best instructive display in apiarian products and of the various uses made of honey and beeswax—1st, Scholl Apiaries, $20; 2d, Smith & Scholl, $10.

Best and largest display of bee-keepers' supplies—1st, The A. I. Root Co., Diploma

San Antonio International Fair, Nov. 6 to 17, 1909

Golden Italian bees and queen in single-comb observatory hives—1st, Smith & Scholl, $5; 2d, Toepperwein & Mayfield, $3.

Three-banded Italian bees and queen in single-comb observatory hives—1st, Scholl Apiaries, $5; 2d, Toepperwein & Mayfield, $3.

Carniolan bees and queens in single-comb observatory hives—1st, Scholl Apiaries, $5.

Caucasian bees and queens in single-comb observatory hives—1st, Scholl Apiaries, $5.

Cyprian bees and queens in single-comb observatory hives—1st, Smith & Scholl, $5; 2d, Scholl Apiaries, $3.

Holy Land bees and queens in single-comb observatory hives—1st, Scholl Apiaries, $5, 2d, Toepperwein & Mayfield, $3.

Banat bees and queens in single-comb observatory hives — Scholl Apiaries, $5; 2d, Smith & Scholl, $3.

Black queen and bees in single-comb observatory hives—1st, Smith & Scholl, $5; 2d, Toepperwein & Mayfield, $3.

Best and largest display of bees of various races in observatory hives—1st, Scholl Apiaries, $10; 2d, Smith & Scholl, $6.

Best case of white section comb honey, 12 pounds or more—1st, Toepperwein & Mayfield, $5.

Best case of light amber section comb honey—Toepperwein & Mayfield, $5.

Best and largest display of section comb honey—1st, Toepperwein & Mayfield, $5; 2d, Toepperwein & Mayfield, $3.

Best display of special designs of comb honey—1st, Wm. Wiede, $5; 2d, Scholl Apiaries, $3.

Best 12 pounds friction-top pails white bulk comb honey—1st, Scholl apiaries, $3; 2d, Smith & Scholl, $2.

Best 6 pounds friction-top pails white bulk comb honey—1st, Scholl Apiaries, $3; 2d Smith & Scholl, $2.

Best 3 pounds friction-top pails white bulk comb honey—1st, Scholl Apiaries, $3; 2d, Smith & Scholl, $2.

Best display of bulk comb honey—1st, Scholl Apiaries, $5; 2d, Toepperwein & Mayfield, $3.

Best dozen jars of white extracted honey—1st, Scholl Apiaries, $3; 2d, Toepperwein & Mayfield, $2.

Best dozen jars of light amber extracted honey—1st, Smith & Scholl, $3; 2d, Toepperwein & Mayfield, $2.

Best display of extracted honey, granulated form—1st, Scholl Apiaries, $3; 2d, Toepperwein & Mayfield, $2.

Best sample cake of bright yellow beeswax, not less than 2 pounds—1st, Smith & Scholl, $5; 2d, Scholl Apiaries, $3.

Best display in special designs in beeswax —1st, Scholl Apiaries, $5; 2d, Toepperwein & Mayfield, $3.

Best and largest display of beeswax—1st, Scholl Apiaries, $5; 2d, Toepperwein & Mayfield, $3.

Best display of fruit preserved in honey—1st, Scholl Apiaries, $5; 2d, Toepperwein & Mayfield, $3.

Best honey-vinegar with recipe—1st, Toepperwein & Mayfield, $3; 2d, same, $2.

Best collection of Texas honey-yielding plants, pressed and mounted—1st, Scholl Apiaries, $5; 2d, Miss Meta Hillje, $3.

Best instructive display in apiarian products and of the various uses made of honey and beeswax—1st, Scholl Apiaries, $20; 2d, Toepperwein & Mayfield, $10.

Best and largest display of bee-keepers, supplies—Toepperwein & Mayfield, Diploma.

Grand special award, best entire exhibit—Scholl Apiaries—Diploma.

Contributed Articles

Chaff Packing for Wintering Bees

BY G. C. GREINER.

The various methods of wintering bees successfully have been for years a source of many animated discussions among professional bee-keepers, but to this day a satisfactory solution in every respect has not been reached. Bee-cellars have certain advantages, and where suitable ground for their construction is available, they are certainly paying investments for the specialist. Wintering on the summer stand with proper winter protection has also its good points, and for the amateur bee-keeper with only a limited number of colonies to winter, it is probably, taking everything into consideration, the most advisable management.

As it is not the object of this article to discuss the pros and cons of either method, we will assume that wintering on the summer stand has been decided upon, and with a view of giving some helpful hints to the beginner or prospective bee-keeper, who may look to us older ones for information, I will express a few thoughts based on many years of practical experience along this line.

We will take it for granted that wintering bees outdoors in single-walled hives, without some kind of winter protection, is extremely risky in this latitude—Western New York—or climates of like nature. I do not claim that chaff-packing is under all conditions an infallible safe-guard against all winter losses, neither is it probable that no extra protection will always cause a colony to perish. There are other conditions—some beyond our control—that determine the fate of a colony, but I know from experience that a good chaff-packing will go a long way toward keeping a colony comfortable during a continued zero spell, when under like conditions, without protection, disastrous results may be the consequence.

We have two distinct methods of providing chaff-packing for our bees; one may be termed permanent, and the other adjustable. A small number of my colonies are in what we call chaff hives for single colonies; although home-made, they embody the regular chaff-hive principle (permanent packing), as those put on the market by all our established bee-supply manufacturers. While they are all right for wintering, they are too heavy and cumbersome to manipulate conveniently, and, what is still more objectionable, they are not readily accessible. For the small bee-keeper, who has no desire to investigate the inside of a hive or manipulate his bees in a professional way, they are preferable on account of being less work to prepare them for winter, or summer either. But to handle bees on a larger scale, and no obstructions to contend with, I prefer the adjustable packing, which admits of being removed during summer.

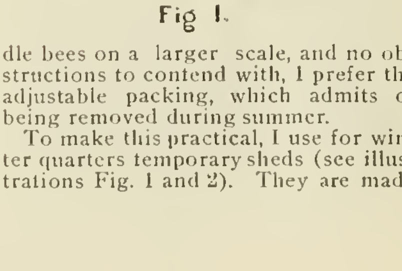


Fig 1.

To make this practical, I use for winter quarters temporary sheds (see illustrations Fig. 1 and 2). They are made in separate sections, held together by 4 wire hooks on each end and one square-headed wood-screw at the middle of each side at the bottom, to keep them from spreading when being filled with chaff. It is not strictly necessary, although convenient for handling and storing, that they should be made adjustable throughout. An adjustable top and back is all that is needed for placing the hives inside the shed. (See back view, Fig. 2.)

With the exception of a few smaller ones, to use when the regular number of colonies is not available, at the end of a row for instance, all sheds are made to accommodate 5 colonies each. Several reasons induced me to make them that size. It takes less work and less lumber to make them, and, when made, less work to use them; it does not seem to take more time to fill a shed with 5 than one with 3 colonies. Then, the common length of lumber cuts to better advantage for that size than for any other, unless we make them larger, which would not be desirable for convenient handling. Other advantages could be enumerated, if it were necessary.

Taking a view of Fig. 3, the following may serve as an explanation:

The top row represents a row of 5 colonies of bees in summer position as they can be found in any up-to-date apiary; the distance between them is about 2 feet, which is necessary to give the operator ample elbow room when performing the various manipulations in connection with modern bee-keeping. The bottom row represents the same 5 colonies in the position they occupy when placed in their shed. It will be noticed that they have to be moved quite a little distance to produce this change, and if this was done at one operation, changing location and appearance at the same time, many bees would be lost. To make this plain, let me digress a little.

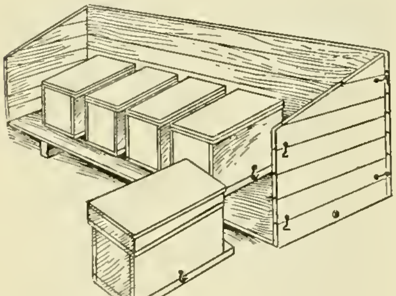


Fig 2.

Bees mark and know their home by location. Appearance has a little bearing on their observing faculties, but in comparison with the former, it is of little consequence. For instance, if we should paint a white hive black during the night, it would confuse the incoming bees next morning very little. They might be somewhat surprised at first, perhaps be a little suspicious, but they would soon enter their hive as usual. But if we should move a hive a short distance to the right or left, and watch the bees next day, we would see many of the flying bees hovering over their former stand, looking for their home, and if other hives of the same appearance were nearer than their own many bees would enter them and be lost. It would take some time until all the bees would be fully acquainted with the change. Now let us make the two changes at once—paint and move the hive at the same time—nothing short of complete bewilderment would be the result.

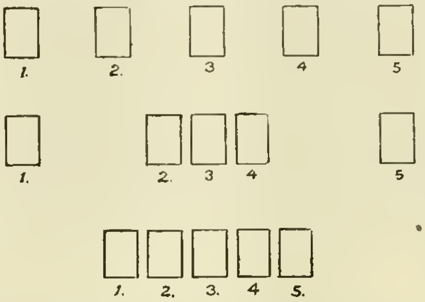


Fig 3.

To save all our bees (and we have none too many at that time) we should take this feature of bee-nature into consideration when changing our bees from summer to winter location. The middle row of Fig. 3 shows the first change that should be made. Hives 2 and 4 are moved near the center hive 3. They should remain in this position for several days, until the bees have become thoroughly accustomed to the change. Then the two outside hives, 1 and 5, may be moved to their proper places, which prepares them all for the final housing. At the close of the last honey-flow is the proper time to do this moving.

The best time of packing bees for winter is during November, whenever the weather is favorable. Cool nights and mornings, when the thermometer registers nearly freezing point, but no frozen ground or frozen-down hives, when the bees are well clustered in their hives, no rain or snow on the ground, dry weather overhead and no heavy wind—these are the features of ideal weather for this work.

When everything is ready for the job, we may proceed in the following way: Set the hives on the ground a little ways back of their stands; clear the ground for the shed bottom and place it on suitable foundation blocks. Build up shed with ends and front (see Fig. 2), and move the hives back to their old place, which is now inside of the shed. It takes only a few minutes to do all this shifting about, and if it is done carefully, without jarring the hives, not a single bee will be seen outside the hives during the operation.

The drawing shows the hive on this end of the row still on the ground. Its telescope cover has not been removed yet; when this is done, as it is the case with the other hives, this last one may be placed alongside of the others inside of the shed. This completes the particular part of the work; the rest, adjusting back section, filling in chaff and laying on cover, which can all be done more leisurely, finishes the job. The chaff should be about 3 inches all around, and 6 inches over the top of the hives.

The entrances of our sheds are ⅜x4 inches, and each one has a little flight-board of about 1½x6 inches. A little board is fastened over each entrance by a screw at the upper end, letting the lower end rest against the flight-board and allowing it to be swung aside (see drawing) when a free passage for the bees is desired. But for common, during cold wintry days, its object is two-fold. When the wind is facing the shed, it prevents a direct draft into the entrance, which would cause a circulation of too much cold air through the hive. On pleasant but cold days it also prevents the direct rays of the sun tempting the bees to take a flight, when they would be chilled before they could return to their home. Many bees are lost in this way.

La Salle, N. Y.

Bee-Keeping in Old Mexico

BY B. A. HADSELL.

Having a son who has lived in that wonderland for years, and his glowing accounts of its great possibilities as a bee, farming, stock, and mining country, exciting my curiosity; and when he reported that I had a grandson down there, I could not resist longer a trip of investigation. I have traveled almost the entire length and breadth of our sister republic, and must confess the half has never been told, and so I will give the readers of the American Bee Journal the benefit of my investigation. While I am supposed to be the largest bee-keeper in the world, I believe there are two or three others that have more. I am a close observer, and have traveled nearly all over the United States, and if my experience is of any benefit I will give it freely.

I formerly supposed that the sage district of California, the mesquite district of Texas, and the mesquite and alfalfa district of Arizona, could not be excelled. But this trip, as seen from a car window, by days of hard horseback riding among the mesquite, and a continual series of blooming trees, shrubs, vines, and herbs has changed my mind. I have often been made to exclaim, "A bee-man's paradise!" and I assure you I will not "let you down" as other writers have done when writing of the good locations in the United States, by saying at the wind-up that the territory is already fully stocked! but, on the contrary, I go hundreds of miles here where there is not a single tame bee to be seen.

As yet, I have not had the privilege of examining a colony of the native bees which are stingless, but will try to do so and report in my next letter. I am now inspecting a section where the temperature ranges from about 70 to 85 degrees, July and August being the coolest, and April, May, and November being the warmest months. The bees gather honey every day of the year. I am not prepared to say when the greatest flow would be, as nearly every tree and shrub produces bloom. The farmer can plow, plant and harvest his corn every day of the year. Usually only a stick is used to plant. Some use a wooden plow. I saw 3 crops on the land at the same time, two of corn and one of beans, as they plant between the rows and seldom cultivate. A hoe is unknown, or at least I haven't seen one.

Morning-glories of many varieties climb the trees 40 feet high, cover the bushes, fences, and shrubs where the timber is not too dense, and the open land thousands of acres of catnip, now in full bloom, from 3 to 8 feet high. Frost is unknown in the southern half of Mexico, yet it is cooler than the summers of the United States. Irrigation is not needed.

I have my ticket to the end of the railroad south, which is the Guatemala line, and will see the sights and then return to my home at Buckeye, Ariz.

(To be continued.)

[No doubt our subscribers would be be glad to hear further from Mr. Hadsell, not only as to the bee-keeping opportunities in Old Mexico, but as to the extent of his apiaries in the United States, his honey crops, varieties of bees used, etc.—EDITOR.]

Overstocking a Locality With Bees

Read at the New York State Bee-Keepers' Institute, held at Geneva, N. Y., March 10 and 11, 1909.

BY W. D. WRIGHT.

The majority of apiarists pursue their avocation with the purpose of securing the greatest income from their apiaries; hence, where the business is followed extensively it becomes a matter of serious import to the owner as to what extent he may increase an apiary in a certain locality, without danger of overstocking the same and thus decreasing his profits.

This subject has been discussed time and time again, and has been a problem with many extensive bee-keepers, and, owing to varying circumstances and different view points, has never been satisfactorily settled and probably never will be; however, the apiarist who possesses the qualifications necessary to insure success will usually avoid extremes.

There are so many factors entering into the case that no rule can be established setting a limit on the number of colonies in one apiary. This must be a matter of experiment and observation. A most important consideration is the honey-yielding flora of the locality. Some locations would be overstocked with 100 colonies; in others 200 or more colonies might give satisfactory results in a very good season. Then, again, in a poor season, when these 200 or more colonies gather a sustenance in summer and just enough for winter stores, giving no surplus, would it not be reasonable to suppose that if but 100 colonies had been kept in this apiary they would have given as surplus the bulk of which the other 100 or more colonies required to sustain themselves? If this supposition is correct, then in the first instance there would be the loss of labor in attendance, interest on investment, etc., while in the second a good profit would be secured.

These illustrations are given on the supposition that no other bees are kept within a radius of 4 or 5 miles. Where many others are kept within this distance, the apiarist must expect to divide his profits with his neighbors.

Many years ago Mr. Adam Grimm, of Wisconsin, one of the most successful bee-keepers of this country, who owned some 1400 colonies at one time, after experimenting largely with many apiaries in different localities, wrote thus in the American Bee Journal:

> "There is no question with me any longer that the smaller the number of colonies kept in one location the greater will be the yield of honey from a single colony. But the question is not, how can a bee-keeper secure the largest yield of honey from a small number of colonies, but how can he secure the largest income by keeping bees? In answer to this question I will say, by keeping and managing well a large number of colonies scattered in different apiaries, none of which should contain more than 100 colonies in the spring. If he could arrange so as not to start with more than 50 in one location in the spring, it would probably be all the better. If placed 3 miles apart there will be no danger of overstocking in ordinary seasons."

Mr. E. France, also of Wisconsin, and father of N. E. France, the present manager of the National Bee-Keepers' Association, wrote to Gleanings in Bee Culture a number of years since, as follows:

> "If you plant out-apiaries don't put them less than 5 miles apart if you can help it. If you are going to keep help at the separate yards to run the bees, 6 miles apart is near enough; then if the pasture is good you can keep from 100 to 150 colonies in each place."

In speaking of travel to out-apiaries, Mr. France further says:

> "Remember when you are locating an apiary, that when you are hitched up and on the road, one or two miles further travel will pay you better than to crowd your pasture. Don't overstock your ground."

Such advice from extensive honey-producers, of long experience, is worth many dollars to ambitious apiarists of lesser experience who will heed it.

The most striking example we have in this country of concentrating large numbers of colonies in a single apiary, is that of the late lamented Mr. Alexander, of Delanson, N. Y. This apiary usually contains about 750 colonies, fall count, and in good seasons I believe the result has been quite satisfactory, although the average yield per colony has not been very large, the grand total being quite surprising; but I believe as good results could have been obtained with fewer colonies, perhaps one-half of that number; however, we lack the necessary data.

I am glad that Mr. Alexander had the courage to put this matter to the test, as the experiment has been of much interest to all apiarists.

I might mention the Hetheringtons, the Coggshalls, Elwood, Dadant, and others, all of whom have kept bees in large numbers, and who have practiced distributing them in numerous apiaries from 3 to 10 or more miles from home. It certainly would have saved a large amount of labor and expense for each could they have concentrated their whole number of colonies in one or two apiaries; and if there would have been profit in such proceeding, is it not singular that all of these bright men, after their wide experience, failed to discover the fact?

Finally, I would say avoid extremes, and if your calculations are in error let that error be upon the safe side.

Altamont, N. Y.

Getting Ready for the Surplus Honey Crop

BY G. M. DOOLITTLE.

Many of those keeping bees seem to think that there is little, if anything, to do in the bee-business after the bees are gotten ready for winter till swarming time arrives the next summer. But such is not the case with the prosperous apiarists. Such know that it is better to do all that they can toward getting ready for the surplus season during the winter, and then if there is time after all is in readiness they can rest up a bit and turn their attention to something else.

My first business, after the bees are in winter quarters, is to go over all of the surplus supers and prepare them for the next season. I did not do this for the first few years, for fear that the bees might die during the winter, and if so then I would have prepared a lot of stuff I would have no use for. But after putting this matter off a few times till the honey harvest arrived, I was caught by having the best part of the season past while I was getting ready for it. From this I learned that it was always best to have the "dish" right side up to catch the honey. A few days' neglect of this will often turn what might be a good season and a success into a failure.

Then, time with the bee-keeper is not nearly so valuable during the winter months as it is in the hurry and bustle of the swarming and surplus season, and, from this point of view alone, the bee-keeper can well afford occasionally to carry over a lot of unused stuff rather than to be making it when time is as valuable to all of us as it is in June, July and August.

My first work in preparing for the next season is to prepare the number of sections which I think I will need above those left unfinished from the season previous. To get at this number I allow 200 one-pound sections for every colony I have in winter quarters; not that I very often have that many filled in one season, but I do occasionally, and when that occasionally comes, they cannot possibly be filled if I do not have them on hand.

Having the sections made the next thing is go over 25 to 50 supers, cleaning the separators or any parts of the super where an extra amount of propolis or burr-combs may have accumulated, thus fixing them so they are ready for the sections, after which the sections are filled with thin foundation to the number needed for these supers, when the supers are filled with sections ready to go on the hives at a moment's notice when I decide according to the opening of the bloom and the strength of the colony that they are needed. Before putting these newly-made and prepared sections into the supers I count up the number of sections I have containing "bait-combs" (those partly or entirely filled with comb, but which were not completed so as to be salable, left over from the previous season), and divide them by the number of colonies I have in winter quarters, so that in preparing the super which is first to go on each colony the average number of these baits can be used in each.

I prepare in this way only one for each colony, as after any colony gets well started to work in a super, baits used afterward seem of little use. Of course the readers all know that these baits are used to entice the bees into the super quicker than would otherwise be the case, as bees will occupy and store nectar in combs which are built out several days before they will go into an empty super and begin building new comb or even working on foundation. Where I can have things just to my liking, I use 8 baits in each super in which any baits are used. I use 11 wide frames holding 4 one-pound sections each to each super, so if I can have 8 baits for each super I have 2 wide frames filled with these baits, when I place one wide frame full of sections with foundation next to the side of the super, then a wide frame of baits following this with 7 wide frames of sections filled with foundation, then another of baits, and lastly one with sections filled with foundation; when the "follower" board is put in and the 11 wide frames keyed tightly together, when the super is ready to go on the hive as soon as the season opens.

I put these baits in thus, for the reason that the tendency of any and all colonies is to commence work in the center of the super or directly over the brood of the hive, which cause the center sections in the super to be completed quite a little before those at the sides are nearly ready to come off, and thus much valuable time is lost to the bees, while the completed center sections get travel-stained and not so marketable, from being completed so long before we can take the whole super off ready for market.

With the baits placed in the super as above given, the whole number of sections in the super are completed at once, the bees being enticed to each end of the super when they first enter it, so that the wide frame of sections beyond the baits is completed as soon as are those in the middle, and thus we can tier this super up, put others over it, or take the completed whole off without interfering in any way with the objects we wish to accomplish. I know we can secure nearly the same thing by having crowded colonies when work in the sections is going on, but such crowded colonies are not able to secure as much nectar as will those which are enticed along, while the crowded colony is much more apt to contract the swarming fever, in which case we will not secure more than half as much as would otherwise be the result.

I have dwelt on this matter more largely than I otherwise would, because I find that very many bee-keepers, especially beginners, pay little if any attention to the matter of having all of the sections in a super completed at as nearly the same time as possible, and without crowding the bees so as to lose a part of the nectar flow, or else have the bees contract the swarming fever, or both.

Having all of the supers which are to contain baits completed, the next thing is to fill all that are left with sections filled with thin or surplus comb foundation, when all are to be piled away in their proper places ready to be used in an hour or so when they are needed.

Then I next go over all unoccupied hives, and make new when new ones are needed, repair anything and everything about the apiary which needs such repairing, till everything that needs attention to make it in perfect order for the coming season has been looked after. In this way my time will not only be spent much more profitably, but much more enjoyably, than it possibly could be by allowing other things to take my attention during the winter and spring, and crowding all of this preparing into the surplus season, which is sure to result in a diminished crop of honey, and through this a lack of love for our chosen pursuit; which lack is sure to produce only a second-class apiarist.

Borodino, N. Y.

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A Large Wisconsin Apiary

BY H. C. AHLERS.

Editor York:—I send you the engraving of "High View Apiary," which, I think, is at present the largest *individual* apiary in Wisconsin. An out-apiary contains 73 colonies.

I have the 10-frame hive in different styles, all taking the Langstroth or regular Hoffman frames. Some 8-frame hives are made to interchange with the 10-frame by attaching ⅞-inch strips on either side, top and bottom.

The hives are arranged in pairs, 16 inches apart, and 32 inches between the pairs, facing south. Each row contains 30 hives. Each hive rests on a concrete block, 16x28x2½ inches. The hives are mostly 3 and 4 story in the busy season. The extracting supers contain but 8 or 9 combs each.

I had 2000 new combs built out, consequently my crop is only about 14,000 pounds from 281 colonies, spring count, mostly extracted; 2000 pounds of this being damaged by about 5 percent honey-dew. My bees had to fly from 1½ to 2 miles to the hickory.

"Protection Apiary," one mile further away, gathered no honey-dew.

Our flow was very slow, but lasted from June 20 to July 26. On account of this slow flow, and building new combs, the first supers were filled with brood where hives had no excluders. These hives made up the loss, however, during basswood bloom.

I don't sell honey cheap enough to sweeten near home, so I am beginning to sweeten Chicago and further away.

West Bend, Wis., Aug. 25, 1909.

"High View Apiary" of H. C. Ahlers, Taken July 26, 1909—223 Colonies.

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The Two Cans of Honey

BY E. D. TOWNSEND.

(*Continued from page 360.*)

There is one place where this artificially cured honey may do; that is, for the baker or manufacturer, as this kind of honey sells for a very low price; we cannot afford to put our clover honey in with this grade. All the baker requires in his honey is a good body. They do not buy high-priced honey for the sweet there is in it; if it was only sweet they wanted they would buy sugar, which is cheaper; the baker uses honey instead of sugar, for the reason that the honey keeps the baked goods moist for a long time. The fact is, some of their baked goods, sweetened with honey, are even better after a year old. If they had used sugar instead of honey in these same goods, they would have dried up and spoiled in a week.

So I have concluded, Dan, that as long as I produce honey for table use I will try to get it in the very best possible shape I know how, then if circumstances should change—*i. e.*, should I ever have bees in a location where the honey was not fit for table use—then it would be time to experiment with artificial ways of curing honey.

Then you mentioned, Dan, that you would save the expense of more upper stories, etc., by this one upper-story system; don't you know that to fix up a suitable place to cure honey artificially it will cost you much more than the few extra upper stories you will need, to hold your whole crop of honey?

You will need a special building, and it ought to be one story and painted black; this to draw all the sun-heat possible. Then, to be on the safe side, you ought to have a good heating stove to be used during damp or rainy weather; then a system of ventilators so arranged that they can be opened in good weather and closed nights and damp spells. The fact is, this matter of evaporating the water out of honey must be attended to constantly; and the expense of the large, wide-surface tanks, fuel, extra labor, etc., will more than offset the cost of a few more upper stories to hold the crop. Then, after you have gone to all this expense and labor, and worked your bees on this system one season, mark my word, you will draw a long breath and think the bees could have done it cheaper. Then another thought that is very appropriate right here; that is, that the advocates of artificially cured honey never claim for their production an article that is superior to that cured on the hive by the bees. Isn't it the case with every imitation, the product is claimed to be *just as good* as the genuine, but is *never* claimed to be superior? Better produce the genuine.

In this conversation Mr. Green had little to say; one could see there was something on his mind; he was not quite satisfied; the enemy had put up a strong talk; he could imagine with what ease and comfort it would be to extract without a single comb to uncap. Then twice as much honey kept coursing through his mind; no stings—this was a good point, he never could relish the idea of being stung; the bees would handle like kittens.

Spring came in due time and found Mr. Ripe with all his new upper stories nailed up and painted, and the frames filled full of foundation; in fact, he had bought an extra number this year, as the prospects were very flattering for a bumper crop of honey, and he did not want to be caught without plenty of upper stories to hold all the surplus honey the bees might carry in an extra-good season, for he was heard to say that the upper stories would keep if they were not used this year.

Mr. Green was not very talkative this winter and spring; the fact is, you would hardly have known he had any bees, his time being wholly taken up on the farm, for why should he worry about the bees? Didn't he have all the supplies he would need? There was even more than one upper story to the colony since those 5 colonies became queenless and had to be united; for couldn't he use those 5 sets of combs to extract from? He hadn't even made any provisions for extra tank-room, thinking he could pick up enough storage around the house, and of course he would have the two barrel tanks that he had always used to separate the scum from the honey in previous years.

Neither had there been any special evaporating house built, for wasn't the extracting house he had always used hot enough to evaporate honey in? One would have thought so had he been in there one of those hot days when the extracting was going on. But he reasoned wrongly, for a non-ventilated house, although warm, would not be the place to evaporate the water out of honey, for you would have to have a circulation of dry air to carry off the damp-laden air of the room before much evaporating would be accomplished.

Then the specially constructed ventilators that would be necessary would have to be "handled;" that is, they would have to be closed during nights and rainy weather, and opened during dry, clear weather; then some provision for artificial heating should be provided to be used during this damp weather, as I have mentioned before. All these things were left undone—a condition we should expect with the average beekeeper were he to undertake to produce honey on this plan.

It was June 22d; the bees had been carrying in clover honey at a "pretty good hickory" for about 10 days.

It was supper time at Ripe's. Mr. Ripe was just sitting down at the table, when Mrs. Ripe casually observed that Mr. Green had called that afternoon and got the extractor. Their eyes met, and in that short space of time both knew what the other was thinking about; no words were necessary.

As Mr. Ripe was spreading his bread with some of his well-ripened, heavy-bodied, aromatic, "left on the hive all summer" quality of honey, fit to set before the President, but still a luxury he was enjoying "as the fruit of his own labor," he asked his wife if Dan had anything to say in particular when he called for the extractor. No, only he "might want to extract some before long," and as he had his team with him, he would take the extractor along.

The next day, *June 23d*, as Mr. Green was looking over his bees he found some colonies that had their upper stories nearly full, and had begun to cap the first honey brought in. Wasn't this the time to begin extracting? The most advanced colonies would soon be full and need more room, perhaps, for all he knew; before another day the hives would be full and need additional room. Wasn't the extractor right in the extracting house this very minute? Yes, he would do it, just a couple of upper stories—one 60-pound can. It did not take much smoke to subdue the bees, and they did not seem to mind it a bit when they were shaken from the combs; it seemed to Mr. Green that the bees just fell off the combs, and, as they took wing, went directly to the field for more honey.

Then the upper stories were not so heavy to carry to the extracting house as usual!

The slickest part of the whole business was in uncapping and extracting, for there was almost none to uncap, and how easy it did extract—just two or three turns and it was done; not much like the long, hard turns Mr. Green could well remember they had to do to get the thick honey out of the combs in years past. He felt almost jubilant. No more of the old, laborious way for him.

Then he bethought himself of the fast age we were living in, how fortunes were made in a day; visions of watered stock flashed through his mind, and he, too, had doubled his "stock," for wasn't it said that all one had to do to double his crop of honey was to use one upper story and extract before it was sealed?

Watered stock, watered stock, kept surging through Mr. Green's mind till it was said that his customers that fall took up the cry, "Watered stock!" and said of his honey that it contained the real stuff; others would say that Green's "watered stock" was not on paper. One said his honey would not have to be boiled down much to make good metheglin.

About a week later Mr. Green examined his first extracting, for be it known that he, from the first, extracted his whole crop just as soon as the bees began to cap in the foremost combs of the one story he used. And what I say of this one can, dated June 23d, I could have said of his whole crop, for it was all taken at the same stage of ripeness—just as soon as the bees began capping along the top-bar of the foremost combs.

I mentioned that Mr. Green examined his first extracting after a week, for surely it ought to be rich and ripe by that time. Then he noticed that if the honey should keep coming in at the present rate, it would be but a day or two before his open storage would be full, and he would have to begin to can some—to make room for more that was now coming fast. This first extracting was given the most open vessels to be found—those with a wide open top—for this might be the greenest to be extracted during the season, so thought Mr. Green; but it so happened that there was no difference in this respect, for it turned out to be a fair average of the crop.

The honey was now cold, and it did appear thicker then when extracted. Mr. Green tasted of it, and it was said that he tasted several times as if not quite satisfied with his own judgment. Could it be—no, it *must* be ripe by this time. "Still, I cannot quite understand that scratchy, raw sensation that remains in my throat after tasting," he mused; "but it must be all right. I'm not quite familiar as yet with this artificially cured honey; it will taste better after I get used to it. Then there are Brown and Smith that are coming after honey tomorrow; I'll draw off this 60-pound can and take it over to the shop so it will be ready."

The scales were balanced on 62½ pounds, as usual, the 2½ pounds being the tare or weight of can; and right here Mr. Green got his first surprise, for, what do you think? that pesky can would hold but 58 pounds net, the best he could do. Green's first thought was that the can manufacturers, too, were watering their stock, or, in other words, were making short-size cans this year. But when he looked he found that the can he was using was not of this season's buying, but was the same as he had used the previous season, with no trouble about their holding 60 pounds net.

At about this time many things passed through his mind, but he could not help thinking but what everything would come out all right yet; at any rate the crop was about half extracted now, and the honey was not so very bad, either.

The next day, true to their promise, the Browns sent their boy after a pail of this new honey. The Browns were one of Mr. Green's best customers, and never lost an opportunity of speaking a good word for Green's honey; they would say to any one who expressed a desire to buy honey, that you "should surely buy your honey of Green, for you are sure, by so doing, of getting the very best the bees make;" that Green is an expert at the production of extracted honey, or something in this strain, and by so doing Green has secured many a good customer through the Brown's recommendation.

This was no news to Green, for hadn't these customers told him, time and again, that the Browns recommended his honey as the best that money could buy? and as they always bought the best of everything, they had come after his honey.

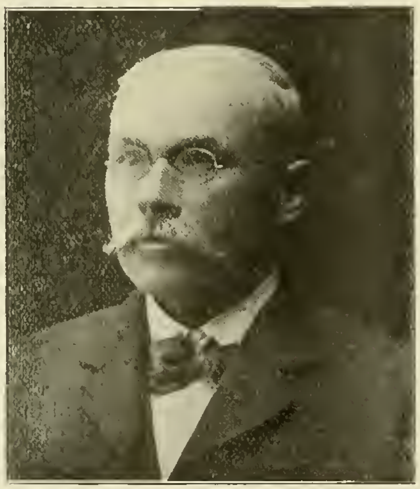
So one can imagine how Green felt when he weighed up this pail of honey and found that it filled the pail rather fuller than last year, and especially when he cautioned the boy to be careful not to slop and spill it; for never before had he put honey on the market that one would have to be careful about how they carried the pail, as to its slopping over on account of its light body.

Green was in sore straits; he usually told his wife of his plans, and if they were working as he expected, and all the particulars, but somehow he did not feel like talking to any one about his honey crop, for, to tell the truth, he was very nearly discouraged; he had not really thought of selling his bees and going out of the business, but somehow he could not help thinking that there was less worry about the farm work than there was about the bees.

It was never this way before, for it was a common expression with him heretofore that he would rather work with the bees than on the farm. This year the work flagged; he did not work with the bees with the same interest as in former years; and with these few upper stories the bees had to be watched more closely than in former years, as they would get their small quarters full more frequently than in former seasons when he had plenty of upper stories to hold the whole crop of white honey, and thus had to extract but once; while now, with this later plan, it did seem as if it took a good part of his time "tinkering with the bees," as he was won't to call it; and this, too, in the very busiest part of the season, when he was needed in the field to help take care of the hay and other crops.

This was something new in his bee-keeping experience, for never before had he spent so much time with his bees—valuable time, as he found out when he came to settle with an extra hand that was made necessary by his being so much with the bees.

Neither was Green deaf to the fact that Mr. Ripe was doing nearly as much work on the farm as if he had no bees; he would see him out with his bee-smoker while the horses were taking their feed; he could see that Mr. Ripe was going over about one-third of his yard each noon, and put on upper stories where they were in need of room. Then the next day another third would be gone over; then the third day he would finish the whole yard. If he was a little crowded for time, or it looked a little like rain, and more hay was to come in than usual that afternoon, you would see that he did not even stop to lift up the full story, but, instead, would put the empty story on top, then some later time, when more time was at his disposal, these empty stories could be put below, or there would be but little difference in results, as he knew, if these empty stories were left on top to be filled. But it was his custom to lift the full story up and place the empty one below, and if there was time that he could possibly spare, and there usually was, the empty one from the top was finally placed at the bottom.


E. D. Townsend.

With this system of looking over one-third of his yard each day, Mr. Ripe was able to see inside of every colony in the yard every third day—plenty often enough, as the experienced extracted-honey producer will acknowledge, to secure every bit of honey the location will produce.

Mr. Green knew all this, and was troubled; his honey was costing him much more work than Mr. Ripe's, and he knew by the number of upper stories on his neighbor's bees, that Ripe was securing about as much honey as he.

Another thought uppermost in Mr. Green's mind these strenuous times (as he knew by previous experience), was was that Ripe, by having a hand to help him 2 days, would do all his extracting during those 2 days and be through with it, and be ready for any other job that might be needed doing, either on the farm or selling honey, as the case might be. The result was that Mr. Green lost at least 3 weeks in the production of his crop of honey, for this was about what time he devoted to the bees, in addition to the time Mr. Ripe spent with his.

It was the middle of July, and the white honey-flow was over, and Green was through extracting; all his open storage was still full of the last extracting of honey—"'Twas being ripened artificially," he was heard to say.

This was the season of the "harvest showers," and he, like the ordinary bee-keeper, had made no provisions for a fire in his honey-house to keep the temperature up, and thus dry the atmosphere that was very damp this rainy weather; the consequences were that his honey would gather dampness during the wet period—about as much as would evaporate during the fair weather—and he was heard to remark that "he never before realized how much water honey would take up from a damp atmosphere." Even if he had had a stove in the honey-house, how in the world could he have spent the time to have kept the fire going, for wasn't he rushed to the utmost trying to take care of the harvest that was cut and ready to be cared for?

I would not have the reader get the impression that Mr. Green was any more negligent than other farmer bee-keepers (or specialists, either, for that matter), for he was very painstaking, energetic and thrifty, as I have said before; but isn't it the record, that if anything has to be neglected about the farm, it's the bees?

Some may think that the writer has drawn an extreme picture in the above case, and that any ordinary bee-keeper would know better than to try to cure honey artificially, without first making quite extensive preparations for the evaporation of his honey before undertaking to cure it artificially. To this I would say, that in the many honey-houses I have visited, not one in a hundred is so arranged but that honey left in open vessels would get poorer in quality every minute it was left open. It would be much better if it were put into 60-pound cans as fast as taken from the bees. The curing of honey artificially is a trade, and should be undertaken only by those with an extended experience, and then only when one is producing honey for the baker, or for manufacturing purposes; for no one has ever artificially cured honey that had that beautiful, aromatic flavor that honey has when well ripened by the bees.

Then this same honey is improved by its being left on the hive after the season, as long as the weather is warm and favorable, but should be taken off and extracted before cool September weather comes on in this locality.

Of course, if the white honey is followed with a flow from buckwheat or inferior honey, the white should be extracted just before the dark begins to come into the hive. Green knew this, and when the quality of his honey did not come up to the standard of former years he was discouraged. It was hard to describe just how he did feel; it is sufficient to say that he formed resolutions in his mind not to be caught in such a predicament again, even though his favorite journal did publish "such trash," as he called it, when in later years he had reason to refer to this "miserable experience," as he termed it, for, to tell the truth, he was anxious to confess his mistake to Mr. Ripe at this stage of his experience, and did, later on, as you shall see. He would often be heard to say that "there would be some excuse for a beginner, without experience, ignorant of the principles involved in the production of honey, to extract before the honey was thoroughly cured by the bees, but for me—an old fogy like me—to be caught in such a trap is ridiculous, to say the least."

Mr. Green was human, like the rest of us, and it was now time to think about turning his honey into cash. He realized that it was early yet, but his honey crop was ready, if it was ever to be; so when he went to town he called on the groceryman and got some pint jars and jelly tumblers to be filled with honey. In going to town he had to drive by Mr. Ripe's place, and he noticed that Mr. Ripe had not done a thing toward his extracting yet, although it was nearly August now. More troubled thought came through his mind as he remembered how, in former years, his hives used to be tiered up 3 or 4 stories high, filled with the very finest sweet mortal ever tasted. His thoughts were anything but pleasant.

The balance of the 58-pound can of honey was put up for the groceryman; he finished putting up the jars of honey, he glanced out of the window—could he believe his own eyes? The Brown boy was going right by with a pail! He would watch. Yes, there he goes to Ripe's; he is swinging his pail; it's empty. In a moment the boy came out; there was no doubt the pail was still empty. Mr. Ripe had no honey for sale—'twas still on his hives. Green knew he had lost his best customer.

This was only the commencement, for one by one his customers left him and went to Mr. Ripe for their honey, for if they paid their good money for honey they wanted the best, and as Mr. Ripe had the best, and charged the same price for it, he would naturally get the trade.

It was the same at the stores. The groceryman was having trouble with the Green honey; some of his customers would bring a part-full tumbler back and ask him to taste the stuff. Was that the same kind of honey they had been buying of him in previous years? "I guess not," they would say; and when the groceryman would count them back the money they had paid for the stuff, they were heard to order a pail of "Karo." "'Twas as good as honey for less money!"

One lady customer in carrying a bottle of Green's honey home with her other purchases, was horrified when the cork blew out of the bottle of honey and smeared all her other parcels, and some even got on her "best dress." Fermentation had set in, and the agitation caused by carrying the honey had caused it to blow out the cork, with the results as mentioned. Do you think that groceryman was in any way anxious to meet this customer, knowing the experience she had had with the goods he had sold her? and would he be likely to buy any more goods that caused customers to leave his store when he knew where he could buy good goods at not much, if any more, cost than this poor stuff?

After these experiences, is it any wonder that Green had trouble in disposing of his crop of honey?

And who could estimate the damage to the fraternity by the dumping of this ton and a half of poor honey on the market? A thousand honey-eaters sickened of honey for the season, and a lingering suspicion of honey, in general, that might last for the balance of their lives! For, what I have said of this 58-pound can of Green's honey could have been said of his whole crop, for it was all the same.

Members of the Canterbury Bee-Keepers' Association.

Who attended the second annual Field-Day of that Association, held at the apiary of Mr. Ambrose Johnstone, at St. Martins, Christ Church, Canterbury, New Zealand.

It was said of Green that before he disposed of his entire crop of 3000 pounds of honey, he drove to all the adjoining towns for at least 25 miles around; and who knows, by so doing, how many bee-keepers were harmed by this poor honey being sold in the territory of others, where some bee-keeper had been working for years, educating the public as to the use of extracted honey?

Let us go back to our old friend Ripe. It was July 31st that Green looked up on hearing the approach of a team, and saw it was Mr. Ripe. He had come after the extractor, and remarked that he thought he would do his extracting tomorrow and the next day. Yes, Green would help him as usual, and Green remarked that he would have asked Ripe to help *him*, only he did his extracting so little at a time that it wouldn't have paid to have him over for so little work.

As was expected, Mr. Ripe's honey was extracted in two days, and part of it put into 60-pound cans. They both had the same arrangement for handling their honey, which consisted of two alcohol barrels with one head removed, and a 1½-inch gate near the bottom, then elevated to such a height as would allow a set of scales, with a 60-pound can setting on top the right distance from the gate, so that the honey would run in to the best advantage. This distance they found by experience was about 2 inches, so if the platform of your scales is 4 inches above the floor, your can 15 inches tall, it would make 19 inches; then the 2 inches to the gate would make 21 inches from the floor to the gate. This would be the right height for the tank. When both tanks are full, should they want to extract more that day, the first tank filled would be skimmed, and enough drawn out so the extracting could be kept up. But they knew that if it could be allowed to stand over night before drawing off, the honey would be as clear as crystal. Of course they would stop drawing at the first signs of scum coming through the gate. They found out by this way of handling that it was not necessary to strain the honey, and as there was nothing to settle to the bottom of the tank, they put the gate clear to the bottom. Arranged this way the honey could nearly all be drawn from the tank before the scum would begin to come through the gate.

It was a noticable fact that Mr. Green would often taste the honey while extracting, and the honey received many a complimentary remark from him on its fine flavor and heavy body; and once, had you been listening, you could have heard him add "bouquet," as if the ordinary language he was accustomed to use didn't quite fit the case.

And such a thought as, "I wish I had one of these 60-pound cans of delicious honey at home for my own use," would flit through his mind, but, of course, it would be unnecessary for me to say he never breathed this thought to a mortal soul.

Holidays came. Mr. Ripe had long been sold out of honey. Green's honey was selling so slowly, and Mr. Ripe's honey being so well ripened and of such good quality, both together, caused Ripe's honey to go "like hot cakes." The fact was, his honey had never been sold with so little trouble as this year.

It was now getting the season of the year when Mr. Green knew that honey ought to be disposed of; and knowing Ripe had all his honey sold, Green accosted him one day saying, "I understand your honey is all sold, Charlie. Couldn't you help me to sell mine?"

"Certainly, Dan; bring over a sample and I'll see what I can do for you. Mr. Gordon, the groceryman, asked me if I couldn't bring him more honey only the other day. Bring me the sample as I go down there tomorrow."

"Sample, sample; confound the sample, anyway! I've made a fool of myself this year, Charlie, and I might as well own it now as later, for it will come out if it has not already been discovered. My honey was produced on the new plan we talked about last winter, for you likely know by this time that I worked my bees on the one upper story, no-uncapping system, and I'm done with it forever, and I guess I'll never get rid of the balance I have of this season's crop, for, to tell you the truth, Charlie, it has stopped selling, and I do not know what to do, so I asked you to help me out, and when you asked me to bring the sample for you to sell from, I saw at a glance it was all off. 'Twas this way; knowing you had had such good luck selling yours, Charlie, I thought you were the person of all persons to help me sell mine; but I now see that it was not the man, but the *quality of the honey* that did the selling. Surely, Charlie, I have learned a lesson this year that I'll never forget."

Ripe consoled Green with the thought that if he had always produced this kind of honey he would not have known any difference, for he was sure that many a bee-keeper was producing very poor extracted honey who had never tasted a good article, and thus was producing what he *thought* to be the regular grade of honey, when he might, by following a better plan, produce honey that would sell better and bring a better price on the market—a honey that would make customers for the most magnificent sweet on earth when properly produced, rather than produce an article that would be a detriment to the fraternity—a trade-killer.

Thus closes the season for one who is poorer financially but very rich in experience.

Remus, Mich.

Beedom Boiled Down

Disinfect Foul-Broody Hives.

The editor of Gleanings thinks too much emphasis con not be placed on this point. He says:

> While we know our friend, McEvoy, in Canada, claims that the disinfection of a hive is unnecessary, our own experience has demonstrated that foul brood could be (and has been) communicated by the hive alone. We have bad reports from Canada, also, as well as elsewhere, showing the reappearance of the disease when the hive itself was not disinfected. While, 99 times out of 100, merely shaking on to foundation is perhaps sufficient, yet if there is one case in a hundred where disease is transmitted through the hive (and we have ample proof that there is), *all* hives should be disinfected. We are glad to note that our government officials stand out square and clear on this proposition.

McEwen's Foul Brood Treatment.

It is a variation of the fall treatment of McEvoy and Alpaugh. It is thus given by Mr. McEwen, in the Canadian Bee Journal:

> In the month of August, or early in September, pick out healthy colonies and put on supers of foundation (or drawn comb preferred) that has never had brood in, and which are perfectly dry. Feed sugar syrup till all is capped. About the middle of October choose an evening that is not too cool, so that the bees can get safely into the hive. Take the diseased combs and put them in a boiling vat. Put a sugar sack or anything that is large enough over the hive you intend to winter them in, and put on the cover. Next day raise the cloth to find where they are clustered. Now look at those bees every day, for they will starve if you neglect them too long. As soon as you see a dozen or two drop from the cluster, give them 6 or 7 combs of sealed honey.
>
> Go also to one of your healthy colonies, and take out a frame that has a good supply of pollen in it, so that they will have pollen to start some brood in the spring. The frame that has the pollen in will do for the seventh frame. Six days is the longest I ever had a colony to hang and stand the fast, and I have yet to experience my first failure by this plan. I have never found that starving bees in October has any bad effect on their wintering well. Should I have the misfortune of ever having foul brood in my yard again, I will do all my curing in the fall by the starvation plan. Mr. McEvoy's plan of putting them on the combs at once is a sure cure, but it must be understood that what Mr. McEvoy means by sealed combs is combs sealed to perfection—not one sigle cell is to be left where they can unload their honey. I have found it easier to starve the diseased honey out of them than to get a lot of combs built to perfection.

Wax-Rendering Without a Wax-Press.

O. Mueller, in Praktischer Wegweiser, thus gives his plan of rendering wax that may be convenient for some who have only a small quantity:

> "I save up all bad combs and scraps until a convenient time in fall or winter. Then I take a copper kettle such as is common in every household (a vessel of any other material would answer), fill it about a fourth full of water and set it on the fire. While the water is heating, I put in the pieces of comb, which of course are directly melted. After the whole mass is thoroughly stirred up and well melted, I let the fire die out, leaving the kettle on the stove to cool slowly. In consideration for the women folks, evening is the best time to operate. Next morning, when all is cold, a somewhat dirty cake is taken out of the vessel, a large portion of impurities being on the under side. With a knife or spoon the under side of the cake is scraped off, but not so closely as to take any particles of wax.
>
> "Of course there will be left in the cake more or less cocoons and other impurities. Next evening break up the cake and melt it in the same way again. After the third or at the most the fourth time of melting and scraping, there will be left a nice cake of clean wax.
>
> "It is of much importance that soft water be used. If hard water must be used, add a teaspoonful of sulphuric acid to each 10 quarts of water."

The Best Harness Dressing.

Three ounces of turpentine and two ounces of refined beeswax are dissolved together over a slow fire. Then add one ounce of ivory black and a dram of indigo, well pulverized and mixed together. When the wax and turpentine are dissolved, add the ivory black and indigo, and stir till cold. Apply very thin. Wash afterward, and you will have a beautiful polish. This blacking keeps the leather soft. It is excellent for buggy-tops and harness. In England a large amount of beeswax is used by the makers of harness-dressing. The above is the usual recipe.—*Gleanings.*

Gray's Flour-Introduction.

For years it has been more or less the practise in England to unite bees by sprinkling them with flour. Now it is used in introducing queens. Joseph Gray, an Expert in Apiculture in England, says in Gleanings:

> I can take a queen from a nucleus, remove the old queen, and have the young queen all right and laying within the hour. A traveled queen or a virgin can be as easily and safely introduced, even though the bees are all alert to seize a leg or wing of the first robber that dares intrude.
>
> To follow this plan of introducing I open the hive, find the comb with the queen on, and remove her. I then lay the comb flat so that both hands are free, dust the bees on the upper side of the comb with flour from a flour-sifter, open the large door of the cage, shake out the queen on to the comb, and dust her with floor. If a flighty queen, I take the precaution to dust her with floor before I open the cage.
>
> If the queen has been removed the day previous, there is no need of removing a frame. I take off the cover, lay the cage on the frames, door upward, and soon a crowd of bees collects around the cage. I dust the lot with flour, swing open the door, when—out steps Her Majesty and attendants, *every one of which will be accepted*—a sure proof of the reliability of the method, for with ordinary plans all attendants are usually destroyed.

Let-Alone Stimulation of Bees.

Not an uncommon thing it is for beginners to ask, "When shall I begin stimulative feeding in spring?" evidently taking it for granted that there can be no question as to the propriety of such feeding. Whatever may be advisable for veterans, feeding in spring for the purpose of stimulating brood-rearing is a safe thing for the beginner to let alone. Indeed, there are not a few of the veterans who think they can do no better than to crowd the brood-chamber with honey the previous season, and then let the bees severly alone the next spring, except in locations where there comes a dearth after brood-rearing has started. Here is what F. H. Cyrenius says in Gleanings:

> During my 40 years' experience in trying all plans of stimulation, I believe, all things considered, *abundant* store of *sealed* honey or syrup give the best results.
>
> I will say right here, no doubt we can increase their activity by daily feeding; but after all it is an activity in the wrong direction. The bees are induced to fly in unfavorabl weather, and large numbers are lost. I

should prefer a plan to keep them at home during the early breeding season rather than encourage them to fly except for business.

In 1878 the season was considered very unfavorable, as the bees had only about one flight in a week; but at that time mine had plenty of honey, which was rapidly changed into brood. It proved to be a very favorable season for early breeding.

The bees that remained at home reared brood, and were not induced to fly out and die. Right in this connection allow me to call attention to old box-hives unstimulated, undisturbed, but with a good queen and plenty of stores—they outstrip our stimulated colonies every time. Their ambition at this time is to convert as much honey into brood as possible; and any man who thinks he can help them at that time of year by spreading their brood, etc., is making a great mistake.

Buckwheat Profitable.

H. B. Harrington, who has had 40 years experience in raising buckwheat, esteems it highly as a honey-plant "from the middle of July, when basswood and clover are past, up to the middle of September, when the fall bloom of wild flowers commences." He says in Gleanings:

Very hot weather will sometimes blight it if you sow too early, and early frosts destroy if you sow too late in the season; so you see you have a seed time from the 20th of June to August 1; and we once harvested over 40 bushels of very fine buckwheat per acre from a crop drilled on the 4th of August; but we used over 300 pounds of first-class blood-and-bone phosphate per acre.

Now to bee-keepers who want the crop for honey. Plant the crop at three different times to prolong the honey-flow, and you will be sure to hit the lucky time for a good field of grain. Buckwheat, on an average, will occupy the land about 60 days. It will commence to yield honey in 15 or 20 days from the time it is planted, and take about 10 days to mature after the honey-flow ceases.

Sow the first crop on the 20th of June; the second crop on the 4th of July, and the third on the 18th of July. We pick the 18th because the best crop we ever raised was sown on that day.

Buckwheat is the greatest weed exterminator that a farmer can use. Plow in June and till well, and two crops will exterminate and clear any fild of Canada thistles.

Bees and Honey in Mindanao

Dr. F. D. Clum, of Cheviot, N. Y., who has a son in the Philippine Islands, has kindly sent us the following article on "Bees and Honey in Mindanao," written by Willis Lynch, and taken from the Mindanao Herald, published at Zamboanga, P. I.:

There are two distinct classes of native wild honey-bees (Apis Indica and Apis Zonata), in Mindanao, in addition to the Italian bees recently introduced from Australia.

Apis Indica, or "Mee Mesa" as it is called in Indica, is a small, yellow hive-bee about onehalf the size of the Italian bee. It is found throughout the entire tropical Orient. It builds its combs in hollow trees and sometimes stores several pounds of excellent honey. They are very nervous bees, very much inclined to swarm, and also to sting if disturbed, yet they are industrious. They protect themselves well from ants and other enemies, and as they can be very easily domesticated, it is probable that they can be bred up.

When we consider the treatment that the native bees have received for countless ages from the native it is strange that they have any good traits left.

Apis zonata is a very large variety of honey-bee, with fine white bands across the upper part of the abdomen. This bee is found only in the Philippines. Its cousin, Apis Dorsata, is found in Borneo and Southern Asia and is much smaller, besides possessing several other traits that make it an inferior bee to the Philippine variety.

Apis zonata, or the large Philippine bee, builds on the outside of the tree instead of the inside as the other bees do, usually on the under side of a slanting tree or branch. They are not migratory as the Borneo and Indian bees are, nor do they always select high trees to avoid honey-bears as their Borneo cousins have to do. They frequently store several pounds of good honey, yet they are greater wax-producers.

They are exceedingly vicious when disturbed, often following their disturbers for several minutes.

This bee is probably the largest and also the strongest of the entire honey-bee family. Its wing power is about double that of the Italian bee, while it lives several times as long, and a sting or two from it will cause a person to see stars in broad daylight.

Their combs sometimes attain 4 or 5 feet in diameter, and are entirely covered with a thick mass of bees arranged as the shingles are on the roof of a house, their wings pointing downward.

This bee is a true Filipino, that is, it sleeps during the hottest part of the day and also on dark nights, though it works very diligently during the early morning and the evening hours, while on moonlight nights it frequently works all night. It is doubtless the only honey-bee that is partially nocturnal.

All atempts to domesticate this bee have thus far failed. The bees will not remain long in a box or hive if placed there. Italian bees will accept a small amount of the sealed brood or young bees of the Apis Zonata and care for them, but if large amounts of this brood are given the Italian bees they will kill off the young ones as soon as they hatch, to keep the young savages from eating up the prepared food of the young Italian bees. It is very probable that this large bee will be domesticated in the near future.

The Italian bees recently imported have done remarkably well on Basilan, fully as well as they would have done in California or any other first-class bee-country.

Mindanao has not the strongly marked wet and dry seasons that are found in other parts, and for that reason has almost a continuous flora of one kind or another; and particularly is this true where rubber, cocoanuts and bananas are planted. In addition to the last-named honey-plants there are large forest-blooming trees that produce an abundance of honey at several intervals during the year.

No country offers more favorable prospects to the practical bee-keeper, the man who keeps a few bees to produce his own honey, or the scientific student of bee-culture, than Southern Mindanao does.

Condensation of Nectar

By what means is the watery nectar that bees get from the flowers reduced to the rich consistency of ripe honey? Years ago A. I. Root recorded that he saw the home-coming bees ejecting minute drops of water as they approached the hive. Dr. K. Bruennich, in Gleanings, confirms this view, and gives his conclusions in the following words:

"The thickening of nectar into ripe honey is not a matter of evaporation, but results from the ability of the honey-sac of the bee to withdraw a part of the water. By the transferring of the honey in the hive it loses by degrees its superfluous water, and is, at the same time, inverted and enriched with formic acid and albumen."

Value of Bees to Fruit, Etc.

C. G. Chevalier, of Baltimore, clipped the following from the Baltimore American, which, although not new, is of general interest, having been written by a London reporter:

The busy bee, despite the precautions which fruit-growers take to keep it away from their fruit, and despite the unreasoning anger of the people whom it stings, is a misjudged insect. In fact, it is a philanthropist, cleverly disguised. Mr. Walter F. Reid, vice-chairman of the British Bee-Keepers' Association, explained in a lecture at the Royal Horticultural Hall yesterday.

He told of the elaborate precautions he had taken to keep bees from his fruit. He covered a gooseberry bush with muslin. The result was there were no bees, and practically speaking, there was no fruit. At least, the bush yielded only 6 berries, while two neighboring bushes which were uncovered bore 151 and 167 respectively. A fruit-grower, he added, who saw that bees were not so bad as they had been painted, actually encouraged them to visit his fruit. He placed hives of bees among the trees with the result that his crop increased fourfold.

The reason, Mr. Reid declared, was that the bees, passing from one plant to another, distributed pollen which fertilized the blossom. "It is estimated," he said, "that one maize plant would produce 50,000,000 grains of pollen, and in the course of a single journey a bee would visit several thousands of blossoms."

Another point in the bees' favor mentioned by Mr. Reid, was that when people were stung by bees once or twice they became immune from bee poison and also other poison. Sir Albert Rollit said that this theory probably gave rise to the belief that bee-sting was a remedy for rheumatism, which was, after all, only a kind of poisoning.

Triple Crop for Bees

A. I. Root, in Gleanings in Bee Culture, says:

In our locality we have never failed with crimson clover when put on good ground in August. It always stands wintering. Now, by using crimson clover, rape, and turnip, all three, we should have three chances for honey, and it is hardly likely that all of them would fail. All three are valuable for feed for all kinds of stock, and they are spendid for turning under to enrich the soil.

The turnip recommended is cowhorn or seven-top.

Not a Blooming Bee-Hive

E. Brubaker, of Philadelphia, has sent in the following on "honey," from the Philadelphia Bulletin, which he thought might be interesting to our readers:

"That was an error," said Senator Beveridge, apropos of an opponent's argument, at a dinner in Indianapolis. "Our friend made an embarrassing error. He reminds me of John Winslow.

"John Winslow spent his honeymoon at Niagara. He left the bridal apartment late one night to bathe, and on his return knocked, as he supposed, on his wife's door, calling softly:

"'Honey!'

"There was no answer. Winslow knocked again.

"'Honey!'

"Still no answer. Winslow thundered on the door.

"'Honey!' he cried, in a voice of agony.

"Then a reply came at last.

"'Sneak, you blooming idiot!' a male voice growled. 'This is a bedroom, not a blooming bee-hive!'"

Clay to Stop Cracks

The best thing that we have ever found for stopping up cracks with when using escape boards, is good stiff clay, the kind that is real sticky when wet. We take a good sized piece and wet it and mix and work it with our hands until we make a sort of dough of it, then every time we put the escape-boards down, we go over all the supers above the escape-boards very *carefully*, all the way around the top of the super, under the cover, all the way around the bottom where it sets on the escape-board, we look all the corners over; in fact, every seam and crack about it, and plaster up every place that a bee could possibly squeeze through.

The bees will not touch it when it is wet and sticky, and when it dries it is so hard they *can't* dig it out.—ELMER HUTCHINSON in Bee-Keepers' Review.

Splints for Extracting-Combs

H. E. Crowthers, in Gleanings, gives the following emphatic testimony to the value of the Miller splints:

The use of splints with foundation is a big advantage, right at this time, in stiffening the combs at their weakest point, which is two inches below the top-bar. We used some in several different ways last year, and will use them on all full sheets this year with two wires and four splints about 5 inches long for Langstroth frames. Of course, the main advantage in their use is in the prevention of sag in the foundation, and the securing of worker-cells in the upper part of the frame instead of sagged cells that are not fit for worker brood-cells. It will pay to use splints for the one advantage of stiffening the comb for extracting, because they save the combs from breakage.

In our experience last year there was no trouble caused by bees gnawing at the lower end of the splints; but I see no use for the full-length splint, and the short ones are easier and more quickly applied.

Light brood foundation with splints gives a much stronger comb for extracting the first time than wired medium brood foundation.

European and American Basswoods

The American basswood blooms earlier than the European by at least ten days. About the time the American basswood begins to go out of bloom, or a little later, the European commences, thus extending the season. It seems to me that the European is more prolific in bloom than the American, and I think that the tree begins to bloom at an earlier age. The European basswood begins to bloom at from five to eight years of age, and being of quite rapid growth, it soon makes a tree of considerable size.

It would be quite possible to select a very early-blooming American basswood and a very late European, thus extending the season still more. If bee-keepers would give a little attention to this matter they might be able to lengthen out the season several days; but it would be necessary, when trees of an earlier-blooming and later-blooming habit were found, to propagate by budding or grafting, which is not a difficult process in the case of the linden.—PROF. W. J. GREEN, in Gleanings in Bee-Culture.

Shallow Extracting Frames

Louis Scholl makes a strong point in favor of these when the crop is short, or when one wants to catch the high price of an early market, in Gleanings:

> While the deep Langstroth supers contain quite a quantity of honey, very little of it is ready to take off, as it is scattered throughout the combs, with some green honey intermixed, which the bees are still bringing in sparingly. It is not profitable to go through these supers and remove only the completed combs, of which there are few, as it consumes entirely too much time.
>
> With the shallow supers we find all the upper ones completed, sealed over, and ready to be taken right off. The honey is riper since the bees began earlier, and has been stored more nearly at the same time, and always in the uppermost part of the hive. Is there any doubt about this being a superior grade of surplus honey over that which is stored in deep combs, besides enabling us to produce more of it, and that earlier, in the shallow supers than in deep ones?

Preventing Honey Running Over

If honey is allowed to run constantly from the extractor, only stopping it when a pail is filled, there is danger of a mess if one forgets and allows the honey to run all over the floor. E. D. Townsend, in Gleanings, gives a way to prevent all chance of such trouble, which Editor Root says is all right if there be a little extra capacity below the extractor reel. Mr. Townsend says:

> Allow the extractor to fill with honey until the revolving baskets begin to swim in the honey. Then set the pail under the gate, lift the handle of the gate and hold it up until the pail is full. With the large gates now put on extractors, and with warm honey a pail will fill in about one-fourth of a minute. Now empty the pail into the tank, leaving it turned upside down to drain until the extractor needs emptying again. We have been all through the troubles which follow when the extractor is run with the gate open all the time. It is a poor and expensive way simply to close the gate when a full pail is exchanged for an empty one. The other way is much better.

Bees Help the Vineyard

A young man in the shoe-business was burned out in the fire at San Francisco. He owned a few acres of table grapes near Sanger, in the San Joaquin Valley. He decided to turn farmer, and went down and cultivated his grapes. The soil was good, the season a fair average, his vines were healthy, his neighbor had big crops. He had nothing. What did he do? He took the next train to Berkeley, and went to the "Cow College," as they call the agricultural department of the State University. He laid the case before the viti-cultural expert and got it diagnosed and prescribed for. The diagnosis was that the blossoms probably needed to be fertilized from the pollen of other vines by artificial means. The prescription was a dozen colonies of bees to be distributed through the vineyard. The next season he had a bumper crop.

This small incident is significant because it is typical. The Californian takes his problem to experts and follows advice when he gets it. He has no bucolic contempt for theorists.—*World's Work.*

Extracting Without Shaking or Brushing

S. E. Miller, of Missouri, thus gives the plan, which seems to be from actual experience, in the Bee-Keepers' Review:

> First, I will say that the plan is not practical unless queen-excluding honey-boards are used, so it will not apply to the fellow who insists upon having brood all through his hives that are run for extracted honey.
>
> Clear a space of all fixtures that may be in the way near the doors of the honey-house. Open the wood doors and leave the screen-doors closed. Leave the door free of all obstruction through which to pass with the wheelbarrow.
>
> All doors and windows should be provided with escapes, and the windows may be used as well as the doors by lowering the upper sash, provided there is room enough to place the supers, and the windows are screened and provided with escapes. Now with your wheelbarrow, your smoker in good order, and your hive-tool, you are ready to begin operations. Two or three robber-cloths will be needed if bees are inclined to rob; and at such time is when this method is of the greatest advantage.
>
> Proceed to the hive you may choose to commence upon; raise the cover and give a few vigorous puffs of smoke. Insert the hive-tool between the super and brood-chamber, or next super below, as the case may be. As you pry it up give more smoke. Standing beside the hive, grasp the super by the end hand-holes; lift it clear of the lower part, and with a sort of swing bring it over and place it on the wheelbarrow, which should be as close at hand as possible. There is a knack about this movement that, if properly acquired, will enable the man of average strength to handle the heaviest 10-frame super of extracting combs with but little difficulty.
>
> If there is more than one super to the hive, proceed in the same manner. When all are off, put on the cover. I would not at this time remove the excluders, as they are sometimes rather hard to remove, and it takes time that we cannot spare just now. Cover the supers with a robber-cloth if robbers are about. Proceed to the next hive and repeat the operation. Continue until the wheelbarrow contains as many supers as you feel like pushing. Then wheel it into the honey-house and pile the supers crosswise of one another near the door or window. In doing this you have not used a brush or removed a single comb from the supers. The supers may be piled as high as you feel like lifting them, and as close together as you can place them. Proceed in this manner until you have occupied all the space you can spare in the honey-house near the door and windows.
>
> By this time the supers that you first brought in are practically clear of bees. The latter having clustered on the screen door, or if sufficient escapes have been provided they will have passed out almost as fast as they leave the supers. It would, therefore, be well to have several escapes in the top of the door, or else to have one large escape the entire width of the door by having the screen run up nearly to the top of the door and having a bee-space between the screen and door frame top.
>
> You are now ready to commence uncapping and extracting, and the bees will keep out of your way about as fast as you can work, provided you can work the supers in the same order that they were brought in. It may be necessary to use the brush occasionally for a few stray bees, but this is a small matter. My doors are not provided with sufficient escapes, and sometimes what would make a fair-sized swarm of bees accumulate in the upper corner of the door frame and on the screen. I simply push the screen door partly ajar, and strike it a blow with my hand, then quickly brush the bees from the door frame and close the screen.
>
> At times there may be quite a few bees flying about in the honey-house, but they are not a serious interference, and one can well put up with it when he considers the amount of hard and disagreeable work he has avoided, for brushing bees from combs out-of-doors, when robbers are on the war-path, is anything but a pleasant task.

Bees in Uganda and Chile

Mr. E. H. Bruner, a Chicago subscriber to the American Bee Journal, kindly sends us the following about bees and beeswax in Uganda, taken from the "Daily Consular and Trade Reports," of Sept. 3, 1909:

> Consul Arthur Garrels, of Zanzibar, reports that, according to an East African newspaper, the chiefs and people of Uganda are becoming enthusiastic in the domestication of bees for the production of wax, one of the few products that can be profitably exported from the Nile country. As a result of the work of instructors sent to teach bee-keeping, bees are being largely domesticated by the natives, as manty as 8000 hives having been erected in the easern province alone, 2000 hives being already occupied, and there is reason to believe that within another year beeswax will be among the staple exports of Uganda. At Entebbe it is worth about 22¼ cents per pound.

Also the following referring to bee-culture in Chile:

> Consul Alfred A. Winslow, of Valparaiso, calls attention in the following manner to one of the more important of the minor industries of Chile, and the opportunity for the more extensive introduction of modern American methods and appliances:
>
> Chile exports large quantities of honey and beeswax, notwithstanding the fact that comparatively little effort is made to advance the industry, as indicated by the following extract from the Boletin de la Sociedad Nacional de Agricultura, the leading agricultural publication in Chile:
>
> "We are safe in saying that there are few countries that have conditions more favorable to the production of honey than Chile. The benignity of the climate in the greater part of her territory, with the exception of the extreme north and south, and the abundant flora, wild as well as cultivated flowers, favor the extension of the bee-industry. Notwithstanding all these favorable circumstances, the bee-industry has not been developed in proportion to the advantages that obtain, owing to the fact that there are so few operators who understand the management of bees, and particularly according to the latest methods. Nevertheless, the production goes on increasing from year to year. The apiaries that are well attended give splendid results, and especially those of the south, where it is not uncommon to find hives that produce as high as 40 kilos 88 pounds) of honey during the year."
>
> During 1908 there were 5,510,120 pounds of honey and 909,125 pounds of beeswax exported against 3,168,440 pounds of honey and 573,760 pounds of beeswax for 1907, of which Germany took about 60 percent, France 15 percent, England 15 percent, and Belgium 8 percent.
>
> Here seems to be a good opening for the further introduction of up-to-date appliances and methods, as the field is ideal for the industry.

Reflections of a California Bee-Keeper

By W. A. PRYAL, Alden Station, Oakland, Calif.

A Garden Trowel as a Hive-Tool

One day I was setting a trap to catch a gopher, and in doing so I usually use a small garden trowel to clean out and sometimes enlarge the rodent's burrow, and when I finished I left the implement on my work bench near the honey-house. Soon afterward I had occasion to overhaul a bee-hive, and along with my hive-tools I took the aforesaid trowel. I thought I would give it a trial as a cover-lifter and a super-raiser, and it worked beautifully. Frames were pried apart, propolis shoveled out of hives occupied by Italians and hybrids; in short, it proved a very useful tool. It is better than a chisel or putty knife, and it is cheap.

Another useful tool in the apiary is a paint-burner's triangular scraper. The interior of a hive can be cleaned most satisfactorily and expeditiously with one of these cheap scrapers. If you haven't one, buy one and thank the "Old Reliable" for making you wise!

About Queen-Rearing

From a town in Kansas a young gentleman sends me this letter:

> "I would like to go to a country like California where I could get out queens earlier in the season than I can here in Kansas. I have a chance to buy an apiary at Glendora, 27 miles east of Los Angeles, Calif. My mother has just returned from Glendora, and she thinks the nights are too cold for queen-rearing. How early and how late in the season can you rear queens in California and have good ones?"

In reply I would say that I do not know very much about the queen-rearing business in the lower part of this State, but I feel sure my correspondent will find the conditions anywhere about the distance he mentions east of Los Angeles all that he could wish for, at least as far as climate is concerned. If one could manage to keep up a supply of drones through the winter, queens may be reared the year around. For the best results it is better, however, to rear queens only during the natural season, for their propagation (March 1 to say Aug. 1), though up to and perhaps in early October, would make no great difference, provided the colonies in which the cells were started are strong, or up to what would be considered normal in early summer.

To make a financial success of commercial queen-rearing in Californa, as well, perhaps, as anywhere else for that matter, it would be well to see that few, or better, no black or other races of bees different from the kind to be propagated, should be in within twice the accredited flying-distance of your bees; that is assuming that your bees travel 3 miles from the apiary, then you would want to be 6 miles from other bees. Six miles is a big radius; perhaps for all practical purposes 4 miles would be plenty, as I am of the opinion that drones, while husky fellows, are just lazy enough, even when on pleasure bent, to fly but a short distance to their trysting grounds or reservations.

Still, on the other hand, a queen may venture further should drones not be close to the apiary in which she was reared. But I suppose you are informed in regard to all that pertains to the subject. I only mention it with a view of cautioning you to produce *good and pure stock.*

To Prevent Swarming

From Dr. Henry Jones I got a small booklet, entitled, "A Radical Cure for the Swarming Habit of Bees," and he asks me to pass criticism on his plan. As it is too late in the season to try it in my apiary, I shall have to wait until next spring before I can treat my bees to its drastic use. The system might be called "abortionating baby bees;" 'tis cruel, and I might uncharitably remark, it would only take a doctor to think of such a plan. It is almost on all-fours with Dr. Osler's idea of killing off the old gentlemen and ladies, as they are useless. For me, I like to see the old folks; I think there is nothing so inspiring as a grand old man and woman, especially if they have led a good and useful life. But, still, to decapitate a portion of the sealed brood when a colony shows signs of swarming, is—well, the dollar-and-cent equation comes in and our scruples may melt into nothingness—we might do as we would do with the poor little kittens we do not want to see grow up about us, and, perhaps, have a half-starved existence. So, until next summer I shall hold my peace about the Doctor's plan, which may be just the thing we have been so long looking for.

Some Gladioli Cranks and Bees

The growing of the gladiolus is getting to be quite a popular fad; it well might be, for it is a fine flower of good form, easy culture and beautiful appearance. Some of the newer sorts are fairly gorgeous, and in colorings, markings, etc., are close rivals of the orchids. For many years I have been an admirer and grower of gladioli, but it was not until this year that I "broke loose" as a genuine "gladioli crank," as an enthusiast of this flower is dubbed. This year my named varieties run into the hundreds, and in my mixtures there are thousands of variations. When my crossed seedlings come into bloom I expect to have something even better than I have been able to purchase or secure by exchange with collectors. (That sounds big, but it is one of the anticipations of the specialist who hand-fertilizes his flowers.)

Here I might mention that the bee has played an important part in bringing about the improvement of this popular garden flower. Some growers still believe bee-fertilized seed is better than hand-fertilized seed. This may be true up to a certain point; by hand-pollination the hybridist can secure about what he wants in a cross; while the bees may use some useless parents in their mix-ups. It is almost impossible, also, for the bee to effect fertilization in some of the large-flowered modern gladioli, as the organs are too often beyond the reach of these insects. Dr. Van Fleet, associate editor of the Rural New-Yorker, and the originator of *Gladiolus Princeps*, the largest flowered variety so far produced, mentioned this fact in a recent issue of that paper.

I notice that bees work very industriously on the flowers of some varieties of this plant; that at times nectar collects quite plentifully in them. I don't know but there are some varieties that are good nectar-secreters.

In this connection I might mention that I have heard that one of the past bright and shining lights of the bee-keeping galaxy, has left the apiarists' camp entirely and is now in the ranks of the gladioli cranks. I refer to A. E. Manum, the one-time famous Vermont bee-keeper. I am informed that he is now somewhere near Los Angeles communing with Flora, and has a big family of rare gladioli under his skillful care. Shake, brother, shake; but, remember, I have not deserted the bees, and I think I never shall entirely.

Apogem—A Fertility Producer

Yes, I don't think you will find it in the dictionary. I think it is a new word and may die a-borning, like many another word that was brought into this cold and heartless world, for some other word may take its place.

Apogem—or Apisogerm, which I am inclined to discard on account of its greater length, if for no other reason—is the innoculation of the soil with a certain bacteria that scientists have so far failed to investigate, and which by its presence causes the soil into which it is placed to become inordinately fertile. Great crops may be easily produced wherever apogem is sown. It has not yet been placed upon the market, and I am not aware that any of the experiment stations have issued a bulletin setting forth its wonderful properties. Of course, it gets its great virtue from the honey-bee. To the alfalfa-grower it is a boon indeed, as it is, in fact, to all other cultivators of the soil, as may be surmised.

If I were avaricious I might make a fortune by this discovery. I don't want to be a Rockefellow and be cursed with tainted money. The secret will be given to the world in the next issue of the American Bee Journal. Be on the lookout for it; tell all your friends to send for a copy of that number in advance, that the publisher may know at once how much larger an edition he should print than usual. Do it to-day; yes, right now write, and don't forget.

California Holly or Christmas Berry

A tree that is seldom thought of as a bee-forage plant in California is the tree that furnishes the beautiful red berries that are so universally used in this State for Christmas decorating; in fact, it is called "California Holly." It is not to be confounded with the English holly, or even the gallberry of the South, which is botanically *Ilex galabra;* our Western plant is *Heteromeles arbutiflora*, and it belongs to the rose family, though it is not to be imagined that it is like the queen of garden flowers, as the Rosacea is a big family or order, and takes in nearly all the cultivated fruits of the temperate zone.

California Holly, or Christmas Berry-Tree.

It is quite common in the coast mountains, sometimes attains to the proportions of a fair-sized tree, but is generally found in shrub form, as shown the accompanying half-tone. It is an evergreen with dark green leaves above, but of lighter color underneath. The flowers, which appear during July and August, are white, and are borne in close panicles at the end of the branchlets. The flowers are richly fragrant and are ravishly sought by the bees for the nectar they contain. The beautiful scarlet fruit is about the size of ordinary sweet-pea seed, is mealy and slightly astringent, but edible.

Mr. Vernon Townsend, president of the California Central Coast Counties Bee-Keepers' Society, stated at a meeting of the organization, that it was one of the best honey-producers he knew of that came after the sages, and he said the honey produced from it was of fine flavor and body. He had extracted much of this honey, and was well satisfied with it, and other members who were acquainted with the product substantiated his statement.

This evergreen tree does not grow in sufficient quantities in my neighborhood for me to form an opinion as to its capabilities as a nectar-secreter, but I know that the bees give it large attention when it is in bloom; back further in the hills there are large acreages of holly, so I suppose it forms one of the best fall nectar-secreting plants all through the western portion of Contra Costa county.

It is trees like this that help to carry our bees over the dry spell; the pity is that we have not more of them.

Our
Bee-Keeping
Sisters

Conducted by EMMA M. WILSON, Marengo, Ill.

Bee-Conventions and the Sisters

Interest in bee-keeping among our British sisters is shown by the fact that in the report of the regular "conversazione" of the British Bee-Keepers' Association (British Bee Journal), there appear 16 ladies among the 85 present. Who can report a bee-keepers' meeting in this country where the brothers did not outnumber the sisters more than 4 to 1?

Women as Bee-Keepers

In a bulletin on bee-culture issued by the government of New Zealand, the author, Isaac Hopkins, says the ladies who take to bee-keeping make excellent aptarists, "much better than the average man." The question is whether the same thing is true on this side the globe, and, if not, is it that the "average man" here is smarter than his antipodal brother, or that the sisters of the United States brand do not come up to their New Zealand sisters? Mr. Hopkins further says:

> In America they rank among the most successful bee-keepers, and peasants' wives on the Continent of Europe usually look after the household bees, from which they derive a considerable proportion of the family income. There is nothing to prevent a fairly healthy young woman from managing and doing the work, with a little assistance during the height of the season, of an apiary of 100 colonies. The work carried out by the lady apiarists at the Ruakura and Weraroa State Apiaries, where, in addition to their actual bee-work, they put together and paint the hives, make the frames, and do everything necessary on a bee-farm, affords practical proof that there is nothing connected with bee-farming but what a young woman can accomplish.

Wintering Bees Outdoors

I have an apiary consisting of 80 colonies of bees. My cellar being too small to accommodate that number, I have arranged for wintering part of them outdoors. I have built double-walled hives with ¾-inch air-space, building-paper between, and with a ¾-inch entrance. What width of entrance would you consider suitable in wintering bees outdoors with this style of hive? Any other suggestions you might offer would be greatly appreciated. Mrs. C. J. Dresen.
Midway, Wis.

For an entrance to a hive occupied by a strong colony, for outdoor wintering, a depth of ⅜ of an inch and a width of 6 inches is considered about the right thing. You say you have a ¾-inch entrance, which no doubt means an entrance ¾-inch deep. If left that depth, 3 inches ought to be sufficient width. But it is better to have the full 6 inches in width and reduce the depth to ⅜ of an inch, because ¾ inch will allow too free entrance for mice. If there is no more convenient way, you may reduce the depth by tacking on a little strip, either at the upper part of the entrance on the front of the hive, or on the floor at the bottom of the entrance.

For a weaker colony, with bees to cover only 4 or 5 combs, an entrance 4 or 5 inches will be enough. You say nothing about a covering on top. Very likely you have that all right, but there is no harm in mentioning that it is important that the warmest covering be on top, even if you have to pile on something above the outside covering. If the coldest part of the hive be on top, then the moisture from the bees will condense there and drip down on the bees. As advocated by Jay Smith, the sides of the hive should be colder than the top, so that any moisture from the bees will condense on the sides of the hive, where it can run down without harming the bees.

Bees as Nature Study in the Public Schools

Mention was made some time ago in this department of Miss Emma V. Haggerty. She was trained as a school teacher in New York City. After teaching for some time there, she engaged in teaching in Colorado, and while there became interested in bees. Then she returned to New York State, and spent some time working with the bees of one of the large honey-producers of that State. Intensely interested, she became proficient in both the theory and practice of bee-keeping.

An apiarist was wanted to take charge of the bees in the Bronx Zoo of New York City. Among those taking the examination for the place was Miss Haggerty, all the others being men. She came off with flying colors, rating 100 percent—10 percent higher than the highest of the others. But she didn't get the place. Some one who perhaps knew more about "pulls" than about bees, ruled that she was ineligible because she was a woman!

So Miss Haggerty went back to her work as a schoolma'am in the city of New York. But she took her interest in bees with her, and it occurred to her that in the "nature work" of the school there might be more of interest, and certainly more of nature, if the children had to do with real live bees. Suggesting the idea to Miss Sarah Goldie, the principal, the latter thought so well of it that she purchased some bees at her own expense. A reporter of the New York World tells about it, and with fewer errors than reporters generally make when trying to tell anything about bees. He says:

> There are 240,000 teachers in Public School No. 190, on East 82d St., all working without a cent of pay from the city. The principal subjects which they teach the 1400 children in the school are industry, loyalty, fearlessness and cleanliness. They also add a lot to the fun the pupils have, and frequently a sample of the teachers' shop-work is sent to the members of the Board of Education in the shape of honey that needs no Government stamp to guarantee its purity.
>
> These teachers are the bees that fill 3 hives on the schoolhouse roof, and another in the assembly room on the the third floor. All they demand of the city is the pollen in the flowers of Central Park, and they go after it themselves.
>
> With all those bees and with all those children in the same school, there is only one case of stinging on record. The victim was a little girl in the fourth grade. She didn't scream, or jump, or kill the bees. On the contrary, she stood the pain with the heroism of a martyr to science and let the insect take its own time in removing the stinger and in leaving her hand. For she had learned in the course of the bee lessons that the stinger is the end of the bee's intestine, and that if it is torn off by a blow or jump on the part of the person stung the bee dies. And the very next composition day that little girl wrote the best essay of the week on bees, taking the sting for her special subject; and she got the customary reward of a box of the school honey for her theme. That incident surely justifies the placing of fearlessness in the special curriculum of the hives.
>
> Furthermore, that stung child hasn't any doubt about what she is going to do for a living when she gets through going to school. Like many of her schoolmates, she is determined to keep bees, on a city roof if she can, and if not there, in the country.
>
> At the youthful grammar school age nearly all these children know practically everything that it is necessary to know about bees and the production of honey, to go into the business, to say nothing about all those moral qualities that, according to the school-books, the "little busy bee" is supposed to instill.

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Preparing Bees for Outdoor Wintering in Cold Climate

Few of the sisters do business with bees on so large a scale as Miss Mathilde Candler, and as she has wintered bees successfully outdoors as far north as Wisconsin, it may be profitable to learn just how she does it. This she gives in the Bee-Keepers' Review. She has been using tarred felt as a winter packing for 6 or 7 years, and for the past 3 years has wintered 300 colonies thus packed with but little loss. She says:

> I put a bee-escape board on each hive. On this I place an empty comb super, and fill it with planer shavings or sawdust; then I put the tarred felt around the hive.
>
> The packing or felt is in two parts—cover and sides are separate. The side paper is as high as the two brood-chambers, and fits *snugly* around the hive, with 6 inches allowed for lap, and is fastened together at the back with a piece of lath.
>
> The cover paper is of tarred felt, the full width, and long enough to reach well over on the side paper. It is then folded snugly down over the top, and kept in place by lath nailed on all 4 sides. The hive-cover is then placed on the paper cover and the job is finished.
>
> One nail in each lath is enough. I used to tack a piece of lath on each of the 4 sides at the bottom of the paper, but for the last 2 years have not done so; if the paper fits tight, and is carefully pressed around the corners, it does not seem necessary.

No doubt the top packing is a very important part. Although she has tried it only one winter, and that a mild one, she is quite pleased with dry sod as a packing instead of planer shavings. She says:

> I placed the sod, cut the size of the top of the hive, grass side down, on top of the escape-board which is on each hive, and under the paper cover, which kept it nice and dry. On top of all is the regular hive-cover.
>
> Although I have used sod as a top packing only one winter, and that a very mild one, yet I cannot see why it should not be as good as sawdust or other packing, even in severe winter, provided it is well dried out when put on, and kept so. It is ever so much more convenient for me than any other top packing I've ever used. It is right at hand, easy to cut with a sharp spade, easy to handle, holds its shape, and does away with the need of an extra super to hold the packing. It feels nice and warm when I slip my hand under the sod. In a few cases I put it right on top of the regular hive-cover, and then put paper over the whole.

Formerly she put the paper cover on top of the regular hive-cover, but now puts it under, as it thus lasts longer.

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Poor Honey Season, But Sister Thankful—Favors Pictures

We have 125 colonies mostly in 10-frame shallow hives. On account of the drouth we got no honey at all until the middle of August. Cat-claw was a failure, mesquite was a failure, sumac was a fifth-crop, live-oak was a third-crop, but we have much to be thankful for; they kept us on corn-bread and beans, a change of clothes apiece (there are 8 of us), and enabled us to keep up with the subscriptions to several much-needed periodicals, magazines and journals, and I need hardly say that the American Bee Journal is one of the most appreciated; and the bees accumulated enough to winter on. We hope for better times next year.

Pray do not leave the illustrations out of the American Bee Journal. As well leave out the butterflies and birds from a garden! I have, for one, written a postal to our friend C. L. Grigsby, of El Casco, Calif., requesting him to send along the photographs he mentioned, and I hope to see them soon on the pages of our much-appreciated Journal.

Mrs. M. E. Pruitt.

Vancourt, Tex., Nov. 10.

Miscellaneous News-Items

Fool Bee and Wise Moth

The busy bee, as we may see.
  Improves each shining hour;
And yet compared with any moth
  It lacks for mental power.

From dawning light till dewy night.
  It toils with restless wing.
That man may steal its store, and then
  Eat every blessed thing.

The moth will let a fellow sweat
  To pay the tailor's bill.
Then all the lazy summer months
  On clothes will eat its fill.

—*Selected.*

◆

Divisible-Brood-Chamber Hives

These were a hobby of E. D. Townsend, but he now has this to say about them among other things in the Bee-Keepers' Review:

> There are some very nice features about the divisible brood-nest hive, but, as a whole, it is disappointing. The main disappointment comes from the financial side of the proposition; caused by the bees not breeding up sufficiently strong during the two months previous to our main honey-flow in June.
>
> It is not the intention of this article to give the impression that this sectional hive is a *complete failure*, but the results obtained with this hive, in comparison with the Langstroth hive, are 15 to 20 percent less in surplus honey.

Per contra, Editor Hutchinson says:

> For nearly a dozen years I had the Heddon hive in my apiary, using it along-side the Langstroth, perhaps 50 hives of each kind, and I never noticed any particular difference in the way that the bees bred up in the spring. I was not *looking* for any difference, not taking particular notice, but if there was a difference, it was not sufficiently noticeable to attract my attention.

◆

A Cheap Bee-Feeder

R. B. Ross, Jr., in the Canadian Bee Journal, gives this description:

> Take the cover of a 10-pound penny-lever honey-pail, place it upside down on a block of wood, over which it easily slips; with a 3-inch wire-nail and hammer, punch from 12 to 15 holes through the cover, but avoid making the holes too large by driving the nail too far. If the holes are about the size of the lead in an ordinary unsharpened pencil they will be just right.
>
> Now fill the honey pail as nearly full as you can—for a 10-pound feed—push the cover on tight, and the feeder is complete.
>
> In practice I place 3 or 4 thicknesses of newspaper directly on the frames, first tearing out holes about 2½ inches in diameter, wherever you wish to set a feeder (usually one feeder is enough, per colony). Quickly invert the feeder over the whole, put on empty hive-body and cover, and feel assured that the bees will do the rest in a few hours without any danger of leakage or loss. As soon as feeding is finished, the pails can be washed out, dried and used at once for storage and sale of honey, as they are undamaged. The perforated covers, costing but a cent or two, represent your actual investment in feeders.

◆

New York Bee-Keeper Slugged

About the middle of October, Stephen Davenport, a bee-keeper located at Indian Fields, N. Y., was visited by two well-dressed young men from Coxsackie, with the apparent intention of buying some honey. After selecting the honey they proposed to call for it the following Sunday. The honey was replaced in the box, and while standing near one of the men the other struck Mr. Davenport a terrible blow on the head with a loaded billet, as it appeared, and almost knocked him senseless. He was struck twice more, but reached the door, pushed it open, and rushed out yelling at the top of his voice. This frightened the men so they ran across a field, but in their haste to get out of the building, they upset the honey which was scattered and broken on the floor. Though the shock and injuries to Mr. Davenport were severe, he was rapidly recovering the first of November.

A reward of $100 has been offered for the apprehension and conviction of the person or persons who committed the murderous assault. It seems strange to Mr. Davenport that any one should so attack him, as he never has any money on hand worth mentioning. We regret very much to learn of this dastardly attempt on the life of one of our subscribers, and trust that the culprits may be arrested and made to suffer for it.

Two Virgin Queens Introduced Together

Two laying queens have been known to live together peaceably if one or both were old. Virgin queens are understood to have a mortal antipathy to each other, a fight to the finish occurring as soon as they can get at each other. But now the supposedly impossible has happened. Here is the statement as it appeared in Gleanings:

> As the season was drawing to a close our Mr. Pritchard, at our north yard, had a surplus of virgins that came near starving to death. He had no place to put them, but he picked out two of the best, and put them into *one* Miller introducing cage. This cage of two queens was then given a compartment in a baby nucleus, and contrary to what he expected, both queens were kindly received; both were fertilized, and both began laying side by side without showing any inclination whatever to quarrel.
>
> Mr. Pritchard accounts for these two virgins not fighting, when placed together, to the fact that they were nearly starved. When put in the same cage they both began to eat away the candy. If they had not been nearly starved, he says the first thing they would have done would be to engage in a mortal combat.

◆

Todd Hive-Stand

F. Dundas Todd has devised a hive-stand that is unique. He says this, in Gleanings:

> At present my hives rest on three dowel-rods ⅞-inch in thickness, and so far I am satisfied with the results. These rods pass through suitable holes bored in 2x4 rough lumber; and as I prefer to have 2 hives on each stand, each will, therefore, consist of 3 cross-pieces. The specifications are: 3 pieces ⅞x42 inches, dowel-rod; 3 pieces 2x4-x24, rough lumber, with ⅞-inch holes bored at 4, 12, and 20 inches, centers 2 inches from one side.
>
> The construction is simple. Push the rods in place and fasten with nails. Cost, about 20 cents.

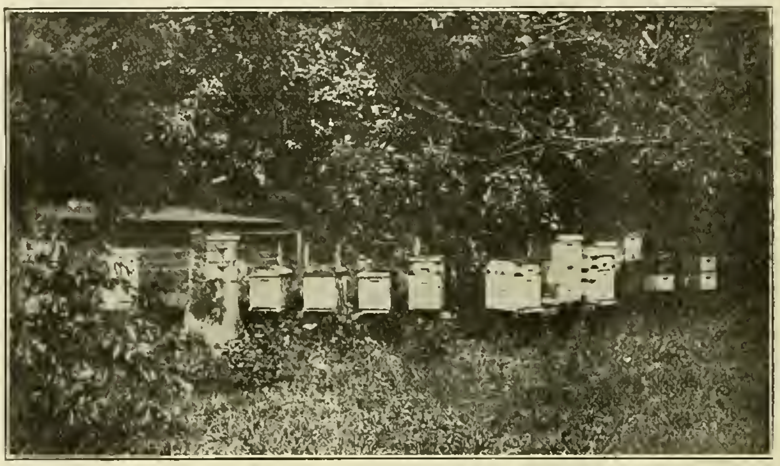
A hive-stand made of fencing, simply 2 cross-pieces nailed on 2 longer pieces, will cost, with fencing at $35 a thousand, about 15 cents for each stand, and it is a simpler matter to make than the Todd stand. What advantage has the new hive-stand to offer that will overbalance the extra expense and trouble? The plain fence-board stand presents a larger surface for the hive to rest upon, and this larger surface of contact gives a good chance for water, in a rainy time, to remain between the bottom-board and stand, making the stand rot much more quickly than the Todd stand with the hive resting merely upon the dowel-rods or round sticks. But the lasting of the stand is a smaller matter than the lasting of the bottom-board. The same rotting that occurs in the stand will at the same time occur in the bottom-board, thus making the cheaper stand much more expensive in the long run. In many localities the presence of large black wood-ants is a factor to be reckoned with. The two flat surfaces coming together offer just the right thing for these pests to make their nests, and both bottom-board and stand will be thoroughly honey-combed. The very small surface offered by the dowel-rods does not favor these nests. In the long run the Todd stands may be much the cheaper.

◆

A Georgia Apiary—Selling Honey

I am sending two views of my apiary located at Thunderbolt, near Savannah, Ga., but while they give a fair impression of the apiary, they do not show the full number of colonies which, at this time, is 26. I am now building a honey-house which will be located immediately under the trees in the rear of the stump which appears in the foreground at the left of the main picture, No. 1.

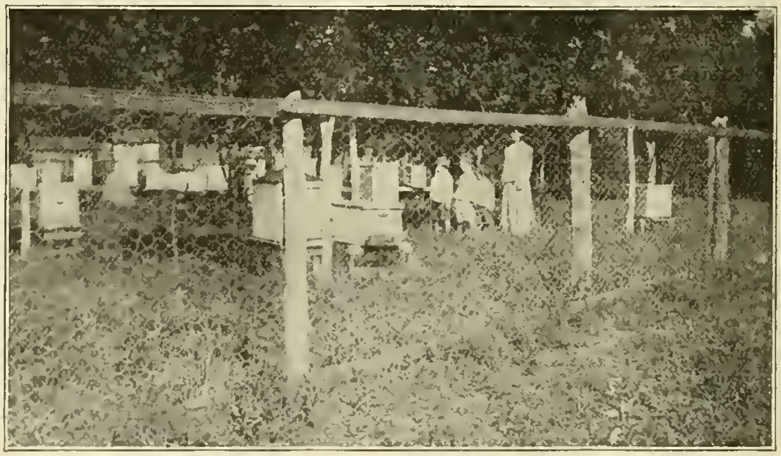
The view of No. 2 is that of my increase for this season, which are all located under hickory trees.



No. 1.—Apiary of L. W. Crovatt, of Savannah, Ga.

I am running a portion of the 26 colonies for extracted and the remainder for comb honey. Last season was extremely poor in this locality, but we are very hopeful for a good crop this year, the spring flow having proven good to date. We depend principally upon the fall flow from goldenrod and prolific swamp growths for our crop in this section. I might say that the year is an exception to the rule since we have secured a fair crop of honey from the spring flow, which is the first in several years. Other bee-keepers of this section report the same condition.

View No. 2 is a picture of Mrs. Crovatt, who hives the new swarms and assists generally in the apiary. In fact, she is my mainstay in the business, looking after things generally in my absence. I am home only on Sundays, and look after the bees only once in seven days. This is our fourth year with bees. Others report failures, but I find invariably that the bees are not at fault; rather the erstwhile keepers, for I have bought out 3 already, and in building up the colonies I have had fair luck to date. Last season I secured 17½ cents per section for comb honey, and 35 cents per pint for extracted honey.



No. 2.—Apiary of Mrs. L. W. Crovatt, of Savannah, Ga.

THOSE FARMERS' TACTICS.

It is a great pity that the bee-papers could not educate up the rural bee-keepers to securing what the honey is really worth for their crop. Think of it! They market honey in the comb for 8 and 9 cents per section! Naturally this has a tendency to depress the market for a better grade of comb honey. But the stuff they market—in Savannah, at least—is little short of a disgrace to the industry. Dozens of times I have seen honey exposed for sale which I would actually be ashamed to admit, if I had produced it. In most cases the boxes are the only redeeming feature, for they, at least, are clean, but the two or three rows of cells next the wood are empty, or only partly filled, and in many cases I have stopped at the stores where this miserable stuff was exposed in a glass case for sale to look at the combs broken from the wood entirely—caps broken and the honey messing up things generally.

But while this stuff is miserable and actually unfit to offer for sale, and hurts the business generally, the store-keepers would rather take it at 8 or 9 cents than to pay 10 or 11 cents for a fancy grade of comb honey. It's money in *their* pockets; the consumer may not know any better, but all the same it makes sore a careful bee-keeper, who takes pride in producing a fancy, nice looking section.

The only way to head off the proposition is to sell direct to the consumer. It takes more time, but repays one for the trouble. That is the reason why I am dealing direct with the consumers, as I have always done, with one exception. L. W. CROVATT.

Savannah, Ga., July 1.

Doctor Miller's
Question-Box

Send Questions either to the office of the American Bee Journal or to
DR. C. C. MILLER, Marengo, Ill.
Dr. Miller does *not* answer Questions by mail.

Long-Tongue Bees—Spacing Frames

1 Which race of bees has the longest tongues—the Italians, Carniolans, or Caucasians?

2. How close can frames be together where there are no foundation sheets used? Can they be 1⅛ inches apart? I have them 1⅜-inches, and the bees build more combs in a hive than there are frames.

PENNSYLVANIA.

ANSWERS.—1. I am not entirely sure, but I think the Cyprians. But there is a variation in bees of the same race.

2. You cannot have combs built true without having at least starters, and 1⅜ is close enough. If you try 1⅛ you will find the bees will do still worse than with 1⅜.

Keeping Honey in an Ice-Box—Joining the National

1. Why is it not advisable to let honey stand in an ice-box?

2. I am desirous of becoming a member of your "League." Kindly let me know what are the requirements. E. ST. LOUIS.

ANSWERS.—1. If you mean by "ice-box" merely a close box with ice in it, I've had no experience. But I have had experience with a refrigerator. Things put in that become dry instead of becoming moist, so honey keeps all right in it. At least it does "in this locality," although Editor Root thinks it will not keep there.

2. I suppose you refer to the National Bee-Keepers' Association. Send your name and a dollar to the General Manager and Treasurer, N. E. France, Platteville, Wis., and you will be enrolled as a member. Or you can send the same to Editor York, of the American Bee Journal, 146 W. Superior St., Chicago, Ill., and the dollar will make you a member of both the Chicago-Northwestern Bee-Keepers' Association and the National. Or, if you prefer, it will make you a member of the Illinois State and the National Associations. You may also, if you prefer, send the dollar to R. A. Holekamp, 4263 Virginia Ave., St. Louis, Mo., and become a member of the Missouri Bee-Keepers' Association and the National.

What Was Wrong With the Bees?

I have a colony of bees in an 8-frame dovetailed hive with plenty of honey, and on the 5th and 6th days of this month (on Friday), about 2 o'clock p.m., I noticed the queen and about 20 bees on the outside of the hive, and the other bees running all over the hive. I put her back in the hive, and the next day she was out the same way, and I tried to put her back at the entrance, and she wouldn't go, so I took the top off and put her in there, and she has not come out any more. I examined the hive well and it is pretty and nice, no weevils nor anything of the kind, and there is plenty of honey. I would like to know what is wrong with her. She was pretty and active, and nothing seemed to be wrong with her. KENTUCKY.

ANSWER. I am at a loss to tell what was the trouble in your case. Possibly, in spite of the fresh looks of the queen, the bees had superseded her, and a young queen was in the hive. Even in that case the occurrence was very unusual, for it often happens that an old queen stays some time in the hive after her daughter begins laying. The likelihood is that next spring you will find the old queen missing. But you cannot tell about that unless she is clipped, for otherwise you will not be able to tell a new queen from the old one.

If any one can tell any better what was the matter, I'll be glad to yield the floor.

I am sitting down to answer your letter less than an hour after receiving it, but it is impossible for the reply to be in the November Bee Journal as you desire. That number, I suppose, is already on the press. It takes time to do the printing and mailing. It takes time to write the answer, and I cannot always answer a letter the same day I receive it, and then it takes time for me to mail the answer to Chicago. So in order to have an answer in any number, the letter should reach me before the first day of the month, making due allowance for the time it takes for your letter to reach me.

Cellar Hive-Ventilatnon—Early Reared Queens

1. My bees are mostly in the form of 4 and 5 frame nuclei — one 4-frame and one 5-frame in each 10-frame dovetailed hive, with the ⅜-inch entrance up, and a bee-tight division-board between. As the entrance is closed up for about 2 inches in the center where the division-board is, this will not provide enough ventilation when in the cellar. If I raise the hive from the bottom-board, there will be danger of the bees or queens fighting, so how can I secure enough ventilation? How would it do to remove the cover and place one or two thicknesses of burlap on top?

2. In the last issue you answered my question in regard to early queens by saying that such queens would not be good. Now, I have prepared my breeding-queens, one for queens, and one for drones, by adding 2 colonies to each and feeding plenty. By stimulative feeding next spring these colonies can easily be made to rear drones, and swarm 3 weeks befoge the rest of the colonies, or about May 20 to 25. Why should these queens not be as good as those reared about June 15?

MINNESOTA.

ANSWERS.—1. I'm not so sure there would be any fighting if the bees were allowed to come together by the raising of the hive. Probably there would be none, although there is a possibility that by spring one of the queens would be gone. However, if you raise the hive so as to allow a passage from one side to the other, you can put in a strip of wood that will close up the passage. The other plan you suggest—providing for upward ventilation—will be all right, too. It matters little where the ventilation is, so there is enough of it. When I first wintered in box-hives in the cellar, I turned the hives upside down. That gave no ventilation below, but oceans of it above.

2. I'm not sure I know just why early-reared queens are poor. It's not merely a question of strength of colony. And I don't believe you can make feeding entirely as good as gathering from the flowers. I know this: that I have had quite a number of queens reared early, first and last, and they didn't begin to average up with queens reared later, there being no difference in the strength of the colonies. Let me give you another point. There's G. M. Doolittle. You probably are aware that he knows as much about queen-rearing as you and I put together, and then some more. Well, I think he says he can't rear good queens much before June. Perhaps I haven't the date right; but at any rate I think he is no more in favor of early queens than I am. If he can't succed at it, you and I may as well not try it. After saying all this, it still remains true that much depends upon the yield of nectar, and it is just as possible that where dandelion is very abundant, good queens might be reared quite a bit earlier than where it does not prevail.

Uniting Colonies With Paper Between

I have just read about your way of uniting 2 colonies by putting paper between them. Did you ever try putting a queen-excluding honey-board between them? I think it does as well. ILLINOIS.

ANSWER.—Yes, I have united with an excluder between the 2 colonies. It is much the same as having nothing between the 2 stories. In some cases—perhaps in most cases—bees will unite peaceably when one hive is set directly over the other, with no excluder between. In such cases of course they would unite all right with an excluder. But too often it happens that if one hive is set over the other without any precaution, there will be a severe fight. In that case I doubt that the excluder would do any good. But the paper will. There is no possibility, with the paper, that one set of bees can fall upon the others *en masse*. It will take a bit of time for a hole to be made in the paper that shall let a bee through, and for some time there will be passage for only one bee at a time. In the meantime the 2 lots of bees are getting the same scent, ready to unite peaceably. At any rate, I've had one lot of bees killed when there was no paper between, and I'm not sure I ever had fighting when the paper was used.

A Variety of Questions

1. Can one be assured that no swarm has issued from a hive by the presence of their old clipped queen?

2. For several years, if I leave any partly-filled sections on the hive to be finished, after the middle of July the bees clean them out. Why do they do it? Stopping of the flow?

3. Has Italy two kinds of Italian bees, the leather-colored and the golden, or are the goldens bred in this country by select leather-colored stock?

4. For several years, in September and October I have caught several stray swarms. What causes these swarms at this time of the year? I have no trouble with my bees swarming after July, at the latest.

5. Is there anything that could be fed to the bees to prevent foul brood?

6. Will bees store more honey in shallow frames than in sections?

7. Can one tell the difference between a colony that is superseding their queen and one going to swarm?

8. In case a colony wants to swarm with a clipped queen, and they fail to get away on account of bad weather or some other cause before the young queen hatches, what will happen?

9. In case they are superseding their queen is there any danger of a swarm? OHIO.

ANSWERS.—1, Yes, with certain exceptions. There have been reports to the effect that a colony with a clipped queen has swarmed, and the queen not being able to go with the swarm, she has been allowed to remain and the swarm has gone off with a young queen some days later, leaving the old clipped queen. Such cases, however, are so rare, I think, that they are hardly worth considering.

The other exception is the common one. A colony with a clipped queen will make preparation for swarming and will swarm just the same as if the queen were not clipped. Then when the queen finds she cannot go with the swarm, she generally returns to the hive, although she may crawl off and be lost. The swarm, finding there is no queen along, generally returns, although sometimes it may join another swarm that has a queen with whole wings, or it may enter another hive where there is the commotion of swarming. If you should open the hive the next day, you would find the clipped queen there, although the colony had swarmed the preceding day. Or, you may find her there several days later, although generally she will have disappeared by the time the first young queen emerges—say about 8 days after the issuing of the prime swarm. Of course the queen-cells will help to tell you the condition of affars.

2. Yes, the flow has ceased, the bees are not gathering as much as they use up each day, and use up what is in the super, or else carry it down where there is now room for it.

3. In Italy there are the leather-colored and also a lighter kind, but I think no 5-banded or golden, whicb is an American affair, not at all always from the leather-colored kind.

4. A late swarm of the kind may occur in much the same way as an earlier one. There may be a better chance in other cases than among your bees, where you take care of them properly.

5. In this country drugs are generally considered of no account in foul brood. In England it is a common thing to add naphthol beta to the bees' food, with the idea that it helps to prevent foul brood.

6. I think so.

7. Not for certain. Generally, however, there will be fewer cells for superseding than for swarming.

8. If bad weather hinders swarming, the case will be the same, whether the queen can fly or not. The bees may give up swarming and destroy the cells, or they may swarm later. See reply to question No. 1.

9. Yes.

Feeding Bees Candy in Winter

1. I began last spring and have about 15 colonies. I find that I must feed about 10 of them 8 to 15 pounds of candy, as they did not store enough honey nor syrup, which I began to feed last month. They did not "take it up," as the books say. I used the division-board and the Miller feeders, and some pans with cheese-cloth on the syrup. I made some 40 pounds of candy last week, but it is just slightly scorched, and I am afraid to feed it to them. I am thinking of making "Good" candy, one part honey and 5 or 6 sugar, and place this on the frames over the brood-nest, with very slazy cheese-cloth between. Please advise me.

2. Can I safely save over the scorched candy until next summer and feed it without danger to the bees—let them store it?

KENTUCKY.

ANSWERS.—1. Your candy on the cheese-cloth may be all right, but it needs watching. There is a possibility that the candy may be so thin that with the heat of the bees it will strain down throug the cheese-cloth. In that case you will have to take the candy out and work a little more sugar into it. There is also a little danger that the bees will not work through the cloth, especially if the candy is pretty dry. Punch a few holes through the cheese-cloth with a sharpened lead-pencil.

2. Save your scorched feed till next spring, *not for the bees to store*, but for them to use up in rearing brood.

Methods of Increase and Honey-Production

I have kept bees for only about 4 months, and I now have 4 colonies. Next season I would like to increase them and get a crop of honey besides.

1. Is the Swarthmore method, *i. e.*, shaking the bees on full sheets of foundation and then giving them a laying queen, better than the Alexander method of increase, as on page 279 of "A B C of Bee Culture?"

2. What is the Doolittle system of comb-honey production? It is described on page 343 of the October issue of the Journal, but the description is not clear to me.

We have quite a few honey-plants around here. There is any amount of whitewood, some basswood, quite a little sumac, and some white, red, and sweet clover.

NEW YORK.

ANSWERS.—1. Likely the Alexander plan may be better for you, as it allows little or no chance for brood to be chilled. But if you expect to double your crop of honey, as Mr. Alexander says you may, by dividing, you are likely to be seriously disappointed unless you have a heavy late flow, as Mr. Alexander had from buckwheat.

2. A book called "A Year's Work at an Out-Apiary" gives in full the system that Mr. Doolittle follows, which is a combination of good things more or less in general use, given by the author in an interesting way. Of course it would be out of question to give details here, but only one special feature may be mentioned, and that is that early in the season he puts over the hive a second story containing combs with more or less honey, an excluder between the two stories, and then when the time comes that there is danger of swarming, or just before the honey-flow, he takes away the brood of the lower story, giving the colony the combs of the upper story.—[The book referred to, "A Year's Work in an Out-Apiary," by Mr. Doolittle, may be had by sending 50 cents to this office.—ED.]

Reports and Experiences

Coal-Oil for Bee-Stings

A few drops of coal-oil applied to the part of the body stung will, in most cases, completely cure and remove all bad feelings in a short time, and also the swelling. A bee-sting has no more effect on me than a flea-bite. E. L. BELKNAP.

Kennydale, Wash.

Very Good Season

The past season was a very good one here. I had 5 colonies and took 300 pounds of comb honey and 100 pounds of extracted, besides increasing to 16 good colonies. The weather is very fine here now. My bees had a good flight yesterday. I put them into the cellar the same evening. JOHN JANACK.

Benson Mines, N. Y., Nov. 20.

Bee-Ranges Spoiled

We Western people are hunting bee-ranges as the farmers are cutting the alfalfa before it blooms, and bees are not doing as well as they used to do. I find the ranges overstocked with bees in most of our Western States, and the practise of cutting alfalfa before it blooms is a severe blow to the industry. GEO. E. DUDLEY.

Denver, Colo., Oct. 29.

Honey-Dew for Cooking, Etc.

Our bees this year gave us a surplus of about 40 pounds apiece in June. July was nearly all honey-dew. We took it off the last of July and extracted everything in the supers, sections, and all. We had a late light flow from Spanish-needle and heartsease, which filled up the hives very well, and we are in hopes they will winter all right. We are usng the honey-dew for making apple and peach butter, cakes, cookies, etc., and are using it up pretty fast. We have a nice lot of combs to use next year.

Center, Mo., Nov. 1. FREEMAN DAVIS.

Experience With Bee-Stings for Rheumatism

Having had some experience with bee-stings, I will give it for what it is worth.

Previous to 1898 I had periodical attacks of rheumatism. Sometimes I was free from it, and sometimes it was very severe. I took treatment for several years with apparently little effect. During the summer of 1899 a swarm of bees settled some 18 feet from the ground, and I got a ladder and dish-pan to bring them down. When I shook them in the pan they fell on the back of my right hand, and they stung it all over until it looked as if there was room for no more stings. I got down pretty rapidly (you may suppose). I could taste the bee-stings and could feel them in the tips of my fingers and to the end of my toes, and I was pretty sick. I poured some ammonia on the back of my hand, and took some internally. My arm swelled continually, but since that time I have been free from rheumatism. I had taken no medicine for months for the rheumatism, and I believe it was the bee-stings that cured me. I had been taking medicine of a doctor some time before, and I told him my experience, and he asked me how many stings I got. I told him I did not try to count them, but from 50 to 100. He said he thought I got enough formic acid to cure me. Should I have the rheumatism again I would certainly try the stings again. S. N. BLACK.

Clayton, Ill., Nov. 29.

Danger of Honey-Dew for Winter Stores

The first entire failure in honey in my 30-odd years experience with bees I met this year. If I get a honey crop we have to have a white clover crop to produce it, and it was plain to me last winter that we would not have a white clover crop this season. The drouth in the summer and fall killed all of the old plants, and the seed did not sprout and come up with this spring. But we have got a fine stand this fall. The season has been very favorable for it.

If it had not been for the honey-dew produced by the plant-lice working on the leaves of the trees, the bees would have been in a starving condition in June and July. I was very liberal with them, when that flow began to come in, and did not put any supers on to dirty the sections with it, for I would not have known what to do with it after I had it, as I doubt very much if it is fit for man's use, and I know it is not fit to winter bees on if we have a cold winter, and they are confined to the hive long at a time. I have "been there" once, several years ago, when I lost quite a number with dysentery. An old saying is, "A burnt child dreads the fire." So I will steer clear of it for they consumed most of it in rearing brood, and I have had to feed granulated sugar syrup for winter stores. Then honey-dew stimulated them so that they built up very strong, and by keeping the syrup off you can guess what the result would be. It kept me with them picking up clipped queens and clipping queen-cells until about the first of July. J. G. CREIGHTON.

Harrison, Ohio, Nov. 22.

Experience With "Chunk" Honey in Iowa

Commencing my second year in the bee-business, I had not yet acquired an extractor, and I was puzzled to know what to do with (to me) a large number of unfinished sections, and honey from a large number of boxes I had in the early spring put into trees. I think there were 25 of them, as well as some from frames from which I had taken the bees to unite them with other swarms.

At this time I knew nothing about "chunk" honey as a commercial proposition, but, as a boy, youth and man, I had eaten "wild" honey, the fruit of robbing bee-trees, and, remembering, I put all my broken combs and unfinished sections into quart Mason jars, "strained" some honey to fill up with, and had not a little bit of trouble selling the whole of it at 10 cents a pound—37 cents for jar and honey, the jar returnable at 7 cents—though I do not know that ever a jar was returned.

I do not *know*, but I think I shall neglect comb honey for chunk another season, principally because I am a hopeless sufferer from asthma, and I need to save steps. I can easier get 10 cents a pound for my honey that way than I can 12½ cents for comb; there is no loss due to worms or dirt; no extraordinary and expensive care required. I get pay for containers, while in selling extracted we give the containers away; no sections to buy, but little foundation, and the bees will go into the frames where they will hesitate to enter the sections.

There may be a problem of the honey candying; I may not make quite so much, or I might make more, but the item of less work appeals to me, and the coming season I shall give it a good trial. In the meantime I have to learn how to keep the queen out of the supers, for last season I was troubled; however, it was an abnormal season.

A last word: Advertising will sell chunk honey, just as it will everything else on earth. I said to prospective customers:

"This is just the same honey as in the sections, *and* you get a full pound for your money and pay less for the pound." I could have sold a thousand pounds in this little rural community. A. F. BONNEY.
Buck Grove, Iowa.

Bee-Stings and Rheumatism

It is a long time since I saw or heard of an old fogy who thought that bee-stings would cure rheumatism. About 30 years ago, when I lived in California, that old superstition was rampant. I hugged it myself for a number of years, but I got no relief. There is just as much sense in kissing the toe of an old saint as to let bees sting you to cure rheumatism. How fooled are those that are cursed with the bee-sting superstition. The most of them eat honey, and that is what gives them relief; that is what carries some of the poison out of their systems. The sting puts poison into their system; honey cleans the system. I don't mean to say that honey will cure rheumatism, but if used rightly, it will suddenly give relief.

I don't think there is a scholar in this world that thoroughly understands the tormentor of men—rheumatism. I have battled against it with all kinds of weapons for years, and changed climates several times, but all was for naught. But in the spring of 1903 we moved to the Bighorn Basin, and my tormented pet absconded, and it will be 7 years next spring that I have been free from the curse, and I consider that a pretty fair test. Now, what was it that made the curse let go of me? I can only give my candid opinion. Man is a conditioned being; rheumatism, whatever it is, is a conditioned something. The conditions for man can be changed so that he will be no more. The conditions for rheumatism can be changed so it will be no more. Now these may not be facts, but one thing, it is my candid opinion; let it be taken for what it is worth.

Another thing I want to mention. When we moved here from Northern Missouri, our shepherd dog was full of fleas and our hogs were lousy. The hogs never knew what it was to be without lice. When they got here the conditions were such that the fleas and lice could not live, and they were rid of them at once. Now there are people here that have rheumatism mostly in the feet and legs. Some think it is not rheumatism, but gout. I don't know as to that. Dr. A. F. Bonney gives a very good description of what rheumatism is. I wonder if he doesn't think there are other forms.
Cody, Wyo. J. D. KAUFMAN.

[It is interesting to note the differences of opinion on the question of bee-stings curing rheumatism. There seem to be two sides to it, just as on other topics. May be the truth will be known some day.—EDITOR.]

Poorest Season in Years

The honey season is ended. I secured 11 pounds of section honey and 200 pounds of extracted from 45 colonies, spring count, so I think the season was the poorest I ever experienced in the 15 years I have kept bees.
Manhattan, Kans., Nov. 1. J. L. YOUNG.

Next Year a Clover Year

The year of 1909 will go on record as one of the poorest honey seasons, very little surplus of inferior quality. The fall flow was a total failure, except a few days when bees worked on heartsease. A neighbor has lost 7 colonies from lack of stores. His bees are the Red Clover Italians, yet there was an abundance of red clover with us this season. Our Caucasians managed to gather a small surplus of clover honey, after the honey-dew was taken off. They have plenty of stores in their 14-frame hives, but I am afraid of the outcome, as I am sure they have more or less honey-dew in the brood-chamber.

I wish to say a word to the readers of the Journal: Look carefully to your bees; feed them candy or syrup, if possible; there are going to be many dead colonies next spring unless they are well cared for. The year of 1908 was a banner white clover year. The ground is thickly covered with young plants from last year's seeding. Therefore, if the weather conditions are favorable, 1910 will be a clover year also. So look out for the bees this winter, and next June they will keep us busy piling up supers.

The "Old Reliable" is growing both in volume and up-to-date information. We surely appreciate the Editor's efforts in bringing forth each month such valuable information from the pens of staff correspondents and others of wide experience. The Journal is a bee-paper in fact, published for the bee-keepers and maintained by the bee-keepers; no other departments to take up space on matters foreign to apiculture; no foot-notes to an ably-written article if said article does not concur with the views of the publisher. Surely, the Journal gives all a square deal. J. W. BLAKELY.
Cardington, Ohio, Nov. 22.

Book Notices

By LEWIS EDWIN YORK,
Supt. Public Schools,
MARTINS FERRY, Belmont Co., OHIO.

Almost Fairy Children.—By Caleb Lewis. Illustrated by George F. Kerr. Indianapolis: Bobbs-Merrill Company. Cloth. 289 pages. Price, $1.25.

This book is a good example of the story-teller's art with purpose that is more than mere enjoyment. There are 12 stories, and each is a gem. Mothers who are looking for something good to read to children from 6 to 12 years of age will find here what they want.

Happy School Days.—By Margaret E. Sangster. Chicago: Forbes & Company. Cloth. 271 pages. Price, $1.25.

This book is one of the most inspiring that has come from the pen of Mrs. Sangster. She handles practically all of a school-girl's problems in a way that is wholesome, interesting, and calculated to teach a sweet reasonableness. A delightful gift for any young lady in High School or Academy.

Boys of Other Countries.—By Bayard Taylor. Illustrated by Noble Ives and others. New York: G. P. Putnam's Sons. Cloth. 166 pages. Price, $1.25.

One would go far to find a better book than this. It has rare literary merit and makes a strong appeal to the best in its readers. High class is the only term applicable to this book. It never becomes wearisome. It will help many a youth to form a character that is altogether admirable.

Manuel in Mexico.—By Etta B. McDonald and Julia Dalrymple. Illustrated. Boston: Little, Brown & Company. Decorated cloth. 118 pages. Price, 60 cents.

This book is one of a series known as "Little People Everywhere." Of these there are 10 volumes. The illustrations are exquisite. The style of the writer is clear and perfectly suited to the purpose of conveying a lasting impression. This series is commended to those who are looking for books that appeal strongly to the eye and to the higher nature.

How the World is Fed. By Frank G. Carpenter. Illustrated. New York: American Book Company. Cloth. 360 pages. Price, 60 cents.

Foods and Their Uses.—By F. O. Carpenter. Illustrated. New York: Charles Scribners' Sons. Cloth. 223 pages. Price, 60 cents.

These two books treat of eminently practical subjects in a manner that is helpful and satisfactory. They furnish information that is not usually found outside of a great encyclopedia,and they have the advantage of originality.

The Life of Alice Freeman Palmer. By George Herbert Palmer. Illustrated. Boston: Houghton, Mifflin Company. Cloth. 351 pages. Price, $1.50.

In this book Prof. Palmer has done a great work for education, as well as for general culture and home life. He sounds the deep places in human experience. Mrs. Palmer was a student, high school teacher, college professor and president of Wellesley College. She wrought a great work for the womanhood of our country. This is one of the really great books of the past 25 years.

Samantha on Children's Rights. By Marietta Holley. Illustrated by Chas. Grunwald. New York G. W. Dillingham Co. Cloth. 318 pages. Price, $1.50.

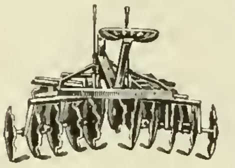
Again Josiah Allen's wife has taken down her pen and ink from the mantletree piece and written a book; this time, instead of the rights of men, women and governments, she talks of the rights of children. She believes nothing is so much needed in parents as common sense and fair dealing. Samantha has had her admirers these many years. Her humor has caught the fancy of the people far and wide, and they have been moved by her pathos, and helped by her high moral teachings. She is entirely an American character, and one needs only to know her to appreciate her. Her books have sold by the millions.

Miss Selina Lue and the Soap-Box Babies.—By Maria Thompson Daviess. Illustrated by Paul J. Meylan, Indianapolis: The Bobbs-Merrill Co. Cloth. 220 pages. Price, $1.00.

The heart-catcher is out again. You might just as well hand over yours, for you cannot resist "Miss Selina Lue." Spinster, store-keeper, and general neighborhood manager, she is a very real, energetic, and delightfully amusing character. Her speciality is a row of soap-boxes in which she keeps a free day-nursery. The pages are running over with children always in comical trouble. If you are susceptible to the charms of genuine homely fun, and characters rich in simple reality, of wholesomeness, and optimism and infectious laughter, "Miss Selina Lue" will put you in love with the world.

☞ Any of the above books may be ordered through the American Bee Journal, 146 W. Superior St., Chicago, Ill. Send us 60 cents in addition to the price of any book as given, and we will credit your subscription to the American Bee Journal for one year.

What Prof. ailey Says:—In a letter to the Cutaway Harrow Co., of Higganum, Conn., Prof. Bailey, of Cornell Agricultural College, gave the following opinion as to the merits of those well-known farm implements, the Cutaway Tools. Prof. Bailey said: "The Double Action Cutaway Harrow has been satisfactory. I use it almost continuously on our hard clay land with good results."



The double action Cutaway Harrow referred to by Prof. Bailey, is one of the most wonderful farm tools ever invented. We reproduce it in the accompanying illustration. Being double action in principle, it works the earth in opposite directions, thus leaving the land true and ready for planting. It takes the place of both plow and harrow. The jointed pole, with which it is equipped, takes all the load from the horses' neck. With a medium-weight team of horses a man can cut 28 to 30 acres of land a day, or double cut 15 acres in one day. Full description of this wonderful tool, together with other necessary tools for farmers' use, will be found in their free booklet. Ask for it from the Cutaway Harrow Co., Higganum, Conn., mentioning the American Bee Journal when writing.

Business Side of Poultry Raising. The happy-go-lucky life of the farmer has passed with changing conditions. Today the successful farmer is a business man, a machinist, somewhat of a chemist and plant-physiologist—in fact, an all-around man. If he raises poultry for market he is acquainted with the best methods of raising the chick to the final handing over the killed chicken to the dealer in the best marketable condition. He makes capons of his surplus roosters, thereby doubling their size and doubling their value, so that a rooster of 4 pounds at 15 cents is changed into an 8-pound capon at 30 cents—just a little difference of $1.80 on the profit side! He uses the most approved poultry markers, and thus reads the history of each fowl by looking at his foot. He kills them in the most humane, clean and scientific manner by the use of the French Poultry Killing Knife. If you have not already a French Killing Knife, send 50 cents to G. P. Pilling & Son Co., Arch St., Philadelphia, Pa., and they will also send you a pamphlet illustrating their various poultry instruments. Little things, say you! Just so; but please remember that the little things make all the difference between profit and loss. Get the "Pilling Habit" and write for information, not forgetting to mention the American Bee Journal when writing.

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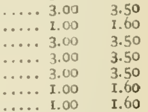

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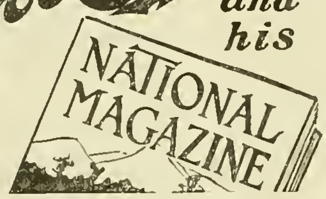

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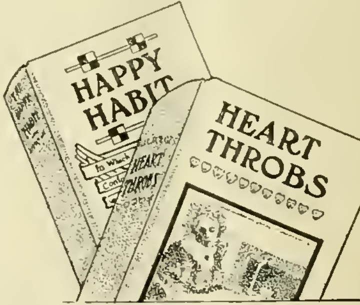

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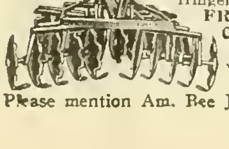

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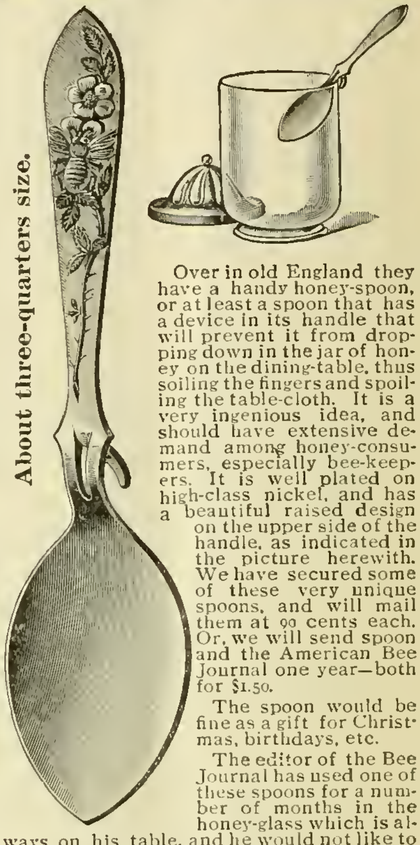

About three-quarters size.

Over in old England they have a handy honey-spoon, or at least a spoon that has a device in its handle that will prevent it from dropping down in the jar of honey on the dining-table, thus soiling the fingers and spoiling the table-cloth. It is a very ingenious idea, and should have extensive demand among honey-consumers, especially bee-keepers. It is well plated on high-class nickel, and has a beautiful raised design on the upper side of the handle, as indicated in the picture herewith. We have secured some of these very unique spoons, and will mail them at 90 cents each. Or, we will send spoon and the American Bee Journal one year—both for $1.50.

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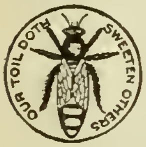
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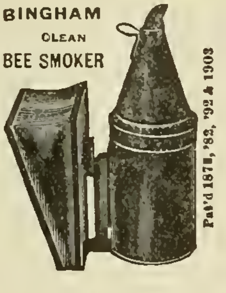

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Prices, prepaid—Sample copy for a 2-cent stamp; 50 copies for 90 cents; 100 copies for $1.50; 250 copies for $3.00; 500 for $5.00; or 1000 for $9.00. Your business card printed free at the bottom of front page on all orders for 100 or more copies.

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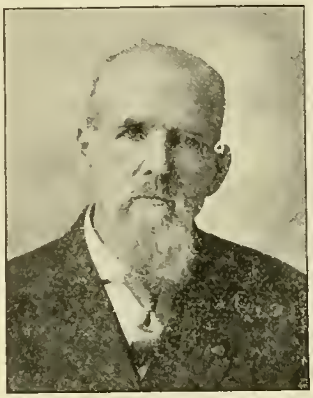

Dr. Henry Jones.

Some three years ago Mr. C. Monette (now deceased), writing from Minnesota, under the *nom de plume* of "C. Davenport," stated in the American Bee Journal that he had discovered a method of absolutely preventing swarming; that he had given the treatment to hundreds of colonies, and not one of them swarmed. Eventually, however, he declined to give the process, saying it would make bee-keeping too easy and honey too cheap. From the hints dropped by Mr. Monette, Dr. Henry Jones, of Minnesota, by an ingenious process of reasoning worthy of Sherlock Holmes, hit upon what he believes (and I agree with him) was the exact plan followed by Mr. Monette. The Doctor has been experimenting with this plan since 1906, going in a little deeper each year, this year using a little over 50 colonies, and swarming was absolutely prevented under very exacting conditions.

There is no clipping of the queens' wings, no caging of queens (not even necessary to look for queens), no pinching of queen-cells, no shook swarming, no dividing, no extra expense; plan simple and easy to carry out, and a good crop of honey easily secured.

The Doctor has described his plan in a little booklet that retails for 25 cts., but I have made arrangements whereby I can club it with the Bee-Keepers' Review for only $1.20. That is, I will send the Review for 1910, and the book, for only $1.20; and, so long as the supply of back numbers holds out, I will send all the numbers of 1909, *free*, to the man who sends me $1.20 for the book and the Review for 1910.

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Honey for Sale.

Choice, well-ripened Extracted — clear, light golden color and delicious flavor—7¾ to 8c. Sample 6c, deducted from order.

Comb Honey, No. 1 and Fancy, in 4¼ plain and scalloped sections, 14 to 16c. 10A3t

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ALFALFA HONEY
—FOR SALE—
White, Heavy, Excellent

One 60-lb. Can, per pound	10c
Two " " "	9½c
10 or more Cans	8½c

Arnd Honey and Bee-Supply Co.,
148 West Superior St., - CHICAGO, ILL.

Honey Wanted.

All grades of Comb and of Extracted. 2000 cases of Buckwheat Comb wanted at once. What have you to sell? Third car of water-white Sage just in. Write for prices.

THE GRIGGS BROS. CO.
11Atf TOLEDO, OHIO.
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HONEY

For Sale — Amber or Buckwheat Comb, 24 sections, in glass-front case, $2.75 per case, 25 cases at $2.60; 50 cases at $2.50 per case. Unfinished Sections at $8 per 100. Will pack honey in straw carriers and guarantee safe arrival.

QUIRIN-THE-QUEEN-BREEDER,
Bellevue, Ohio.
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For Sale WHITE CLOVER HONEY

Simply delicious—at 10c per lb., f. o. b. Seneca, Ill. In crates of two 60-lb. cans each. Sample 10c.
11A2 **A. J. Diebold, Seneca, Ill.**
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FOR SALE

We have several hundred Cases of good Second-Hand Cans, two in a case, used only once with White Honey—

10 Cases or over	40c per Case.
25 " " "	35c " "
100 " " "	30c " "

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HONEY FOR SALE

By members of the Michigan Bee-Keepers' Association. For free annual booklet giving names and addresses of members, address the Secretary. 7Atf

E. B. TYRRELL,
230 Woodland Ave., Detroit, Mich.
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Wanted—White Honey.

State kind, how put up, and lowest cash price.
CHAS. KOEPPEN, 1508 Main St.,
9Atf FREDERICKSBURG, VA.

Honey Brokers: We offer a car water-white Sage, 6¼ cts.; car lt. amber, 5⅝ cts. per lb.
11A2t **Freeman & Fairchild, Redlands, Cal.**
Please mention Am. Bee Journal when writing.

Honey and Beeswax

Chicago, Nov. 25.—The market has been quite active up to the present time, and stock of comb honey is very low. Extracted is also selling quite freely, but stock shows some accumulation. The best grades of white comb honey bring 16c per pound, with other grades from 1@3c less. Extracted, from 7@8c for the white, and 6@7c for the amber, all according to quality, flavor and style of package. Beeawax continues to be in good demand at 30@32c.
R. A. Burnett & Co.

Boston, Nov. 26.—Fancy white comb honey at 16@17c; No. 1, 15@16c. White, extracted, 8@9c; light amber, 7@8c; amber, 6@7c. Beeswax, 30@32c.
Blake, Lee Co.

Los Angeles, Dec. 1.—The quotations on honey at the present time are about as follows: Water-white extracted, 6½c; white, 5½@6c; light amber, 4½@5c. H. J. Mercer.

Kansas City, Mo., Nov. 26.—The demand for both comb and extracted honey is fair; the receipts light. We quote: No. 1 white comb, 24 sections, $3.35 per case; No. 2 white and amber, $3.00; white extracted, per pound, 7c. Beeswax, 25@28c.
C. C. Clemons Produce Co.

Cincinnati, Nov. 26.—The market on comb honey is exceedingly brisk, and has made an advancement. We quote comb honey, 24 sections to a case, in large lots, $3.50 per case; by the single case, $4.00. The market on extracted honey is good. Sage at 8@8½c; amber in barrels, 6¼@6½c. Beeswax is fair at 33c per pound. These are our selling prices, not what we are paying.
C. H. W. Weber & Co.

New York, Nov. 26.—We are having a fair demand for comb honey at following prices: Fancy white, 15@16c; No. 1, 13@14c; amber, 12c; buckwheat, 11@13c, all according to style of package and quality. While the receipts have not been quite as heavy as in former years, there has been enough to go around, and some is still in the hands of the producer, and has not been marketed as yet. Extracted honey in fair demand, also with sufficient supply, especially from California. We quote: Water-white sage, 8@8½c; white sage, 7½@8c; light amber, 7c; buckwheat, 7@7½c; Southern in barrels, 65@75c, according to quality. Beeswax steady and in good demand at from 29@30c.
Hildreth & Segelken.

Philadelphia, Dec. 6.—The season is now well advanced, with only about 2 weeks more for the sale of honey. Pprices have not changed in the last 10 days, but, if anything, will weaken from now until Christmas. We quote: Fancy white comb honey, 16@18c; No. 1, 14c; amber, 13c. Extracted, white, in 5-gal. cans, 9c; amber, in barrels, 6c; amber, in cans, 7c. Beeswax, 29c.
Wm. A. Selser.

Indianapolis, Nov. 25.—There is a good demand for best grades of honey, but the market is now well supplied. Indiana bee-keepers, as well as merchants, are good buyers. Producers are being paid the following prices: Fancy white comb, 16c; No. 1 white, 14c. Finest extracted in 5-gallon cans, 8c. No demand for amber or off grades. Producers of beeswax are receiving 28@30c. Walter S. Pouder.

Toledo, Nov. 26.—There is practically no change in the honey market over our last quotations. The demand seems to be about normal for this season of the year, and owing to the high prices honey is not selling as well as expected. Fancy white clover brings in a retail way 16@17c per pound; No. 1, 15@16c; fancy amber, 14@15c. No demand for darker grades. Extracted, white sage, in cans, 9@10c; white clover, the same; amber, 6@7½c. Beeswax, 28@30c.
The Griggs Bros. Co.

Zanesville, Ohio, Nov. 26.—In spite of lax enforcement of the law closing Zanesville's saloons, the "dry" regime is resulting in a better demand for honey this season, though unreasonably warm weather has appreciably retarded sales for the past week or two. For No. 1 to fancy white clover comb, which is the grade this market chiefly demands, producers are offered 14@15½c, and for best clover extracted, 8½c delivered. Wholesale prices are 2@3c higher than this on comb, and 1@2c higher on extracted. For good yellow beeswax, producers are offered 28c cash, or 30c in trade.
Edmund W. Peirce.

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Bees like it, and the foremost

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Will send shipping-tags, when you write asking for quotations.

We pay highest market prices.

W. T. FALCONER MFG. CO.
JAMESTOWN, N. Y.

HONEY

The present season has been a poor one for honey in many sections of the East. We are not dependent upon Eastern markets, however, for, in addition to our Eastern stocks, we have secured several cars of honey from California. Please do not think that because we have Western honey, it is inferior in quality. On the contrary, we have some of the finest honey ever produced, and a sample shipment will convince you of its quality. We can supply either comb or extracted, water-white or amber. Write today for prices and samples.

If you have been so fortunate as to secure more honey this season than you can use, we shall be glad to hear from you. State what kind it is, how it is put up, and lowest price you expect for it delivered in Cincinnati. Do not ship without definite instructions, for we are taking in honey every day and may not have much storage room.

We also have our usual complete line of bee-keepers' supplies. Send in your orders now and get the benefit of the December cash discount, which is four per cent. Our goods are fresh and clean, and the best on the market. Catalog on request.

We Wish All Our Patrons a Merry Christmas and a Happy New Year.

C. H. W. WEBER & CO.
2146-2148 CENTRAL AVENUE, CINCINNATI, OHIO

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BEE-KEEPERS OF THE WEST

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Let us send to you our prices for
Working your Wax into

DADANT'S FOUNDATION

Many large Honey-Producers prefer our Foundation to other makes, because the bees like it best.

We can use almost an unlimited quantity of BEESWAX, and we are buying at all times of the year **at highest cash prices.**

During the season of 1909 we handled over 150,000 pounds of Beeswax.

If your Honey supply is short we can supply you with either

White or Amber Extracted Honey.

SEND FOR PRICES AT ONCE.

HONEY

If your WHITE CLOVER crop is short and you want some good Honey to supply your customers we can offer you

White Alfalfa Honey

at the following prices:

1 60-pound Can - -	10c per pound
2 60-pound Cans or more -	9c per pound
10 60-pound Cans or more	8½c pr pound

This Honey is put up in new, bright Cans, neat and clean, and we can guarantee it in every way.

Sample by mail, 5c to pay for postage.

DADANT & SONS, Hamilton, Illinois.

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